

**ATTITUDES TOWARDS RELATIONSHIP POWER AND  
CONCURRENT SEXUAL PARTNERSHIPS AMONG AFRICAN  
AMERICAN ADOLESCENTS IN BALTIMORE, MD**

by  
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## **ABSTRACT**

### **Background**

African American adolescents are disproportionately affected by sexually transmitted infections (STIs) including HIV. A growing body of literature suggests that high rates of sexual concurrency may contribute to African American adolescents' heightened risk for STIs and that gender role beliefs may be an important driver of this sexual risk behavior. Although a number of studies point to a connection between gender ideology and STI risk, a more detailed picture of the sociocultural and economic context of this relationship has yet to emerge.

### **Objectives**

The objectives of this research are to 1) provide a more nuanced understanding of the ways in which socioeconomic context shapes gender role beliefs among low and middle SES African American adolescents and 2) examine how the construction of gender ideology and its subsequent relationship to sexual concurrency differs between African American and White adolescents.

### **Methods**

Qualitative data from semi-structured in-depth interviews with 32 African American adolescents in Baltimore, MD were analyzed to explore the role of socioeconomic instability in shaping adolescents' beliefs about what it means to be a man or woman. Deductive and inductive approaches to qualitative analysis were adopted to identify recurring themes and concepts.

Using quantitative household survey data, the validity and reliability of the Power and Attitudes in Relationships (PAIR) scale were tested within four distinct adolescent populations (N=352) in Baltimore, MD: African American males, White males, African American females, and White females. Mean scores by item were generated and PAIR's association with having a risky partnership was tested using multivariate logistic regression within each subgroup.

Using partnership-level data (N=462) from the same sample of African American and White adolescents, bivariate and multivariate logistic regression analyses were conducted to examine whether concurrency within heterosexual partnerships is associated with participants' attitudes towards relationship power and to assess whether this relationship varies by race, SES, and/or type of partnership among adolescents in Baltimore, MD.

## **Results**

Adolescents experienced interconnected vulnerabilities with periods of financial, housing, and family instability sometimes driven by family members' use of drugs or incarceration. Their families often relied on social networks for support. Participants conceptualized gender roles in reaction to this insecurity. "Being a man" was to be financially stable, law-abiding, and a provider for family. "Being a woman" meant financial stability, maintaining a monogamous partnership, and limiting offspring. Transitioning into adulthood required youth to rise above adversity, relinquish social support, and take responsibility.

PAIR may be a valid and reliable measure of relationship-oriented gender role beliefs among White and African American male and female adolescents. However, the factor structure and psychometric properties of the scale varied by sex and race. Overall, African Americans expressed more traditional attitudes towards power in relationships. Lower PAIR scores, indicating more traditional beliefs about heterosexual relationship power, were associated with having a high-risk sexual partnership among only two sub-samples (all males and White females). The opposite relationship was found in African American females.

The practice of concurrency was common in our study sample, demonstrating its salience as a risk factor for STI transmission among adolescents in Baltimore. Results indicated that male adolescents who held more equitable attitudes towards the balance of power in sexual relationships were less likely to engage in index partner concurrency. Conversely, female adolescents who adhered to more equitable gender-related attitudes were more likely to

experience sex partner concurrency. These relationships differed significantly by socioeconomic status among males and females and sexual partnership type among males.

## **Conclusions**

The reduction of racial disparities in STIs requires that researchers and public health practitioners take a comprehensive approach to disease prevention that addresses the root causes of transmission. Gender role beliefs are a universal component of the human experience and may be a particularly salient predictor of sexual concurrency among African American adolescents. Understanding the nature of these beliefs and their nuanced relationship to sexual behavior is a first step towards improving sexual health outcomes for adolescents.

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## **CHAPTER 1: INTRODUCTION**

Each year in the United States, there are an estimated 19 million new cases of sexually transmitted infections (STIs), costing the country approximately 17 billion dollars in direct medical costs (CDC 2011d). Although adolescents form only one quarter of the sexually active population in the United States, they represent almost half of new STI cases and are at increased risk of acquiring STIs compared to older adults (Weinstock, Berman, and Cates Jr 2004; CDC 2010). The adverse health consequences associated with STIs are severe: infertility, pre-term birth, pelvic inflammatory disease, and increased risk for contracting HIV (Kaestle et al. 2005; Land and Evers 2002; Moodley and Sturm 2000).

The burden of STIs is not distributed equally among adolescents, with African Americans at higher risk of contracting chlamydia, gonorrhea, primary and secondary syphilis, and HIV compared to their white counterparts. Young African American women, in particular, bear the heaviest burden of gonorrhea and chlamydia of all populations in the U.S. (CDC 2011a, 2011b).

STIs have had a substantial impact in Baltimore, Maryland. Among large U.S. cities, Baltimore has the fourth highest AIDS rate, ranks third for gonorrhea, and sixth for chlamydia (CDC 2005). Adolescents account for a large proportion of these infections. A recent, household-based survey found that 11% of young men, aged 15-24, and 15% of young women, aged 15-24, living in Baltimore City report a history of gonorrhea while 13% of young men and 29% of young women report a history of chlamydia (Polk et al. 2011).

### ***Multi-Level Risk Factors for STI/HIV Transmission among Adolescents***

Seventy-five percent of HIV infections in the United States are acquired through heterosexual intercourse, which is the primary mode of STI/HIV transmission among adolescents (Weinstock, Berman, and Cates Jr 2004; CDC 2011c). Approximately half of American students, grades 9-12, report previously engaging in sexual intercourse (CDC 2008) with percentages higher among African Americans (67%) than their White (44%) and Hispanic (52%) classmates. African American adolescents are additionally more likely to report having had sex with four or more

people, before the age of thirteen, and in the past 3 months (CDC 2008). Similarly high levels of sexual risk behavior are reported in Baltimore City where a 2004-2007 household survey of sexually active African American adolescents found an early mean age of sexual debut (13.4 years for males; 14.8 years for females) and high numbers of lifetime sex partners (>20 for 21.4% of males and 5-10 for 23.2% of females) (Polk et al. 2011).

STI risk behavior among adolescents is situated within a broader social-ecological context in which predictors of risk exist at the intrapersonal, interpersonal, and environmental levels. At the intrapersonal level, psychosocial factors (e.g. self-esteem, self-control, self-efficacy, body image, perceived susceptibility to STIs) as well as behavioral factors (e.g. substance use) may facilitate or create barriers to risky sexual behavior (Marshall, Crepaz, and O’Leary 2010; Romero et al. 2011). Past studies focused primarily on these individual-level skills and attributes, grounded in theories of health behavior (e.g. Health Belief Model, Theory of Planned Behavior, Social Cognitive Theory) which assume that STI risk behaviors are largely the product of rational decision-making (Latkin and Knowlton 2005; Rosenstock, Strecher, and Becker 1994; Fishbein, Middlestadt, and Hitchcock 1994; Bandura 1994; Lightfoot and Milburn 2009).

In the past few decades, however, researchers have increasingly drawn attention to the influence of the social and structural environment on STI risk (Rhodes and Singer 2005; Latkin et al. 2010). Broader contextual forces (e.g. socioeconomic status, community violence, neighborhood disorganization) are believed to interact with interpersonal factors (e.g. social capital, parental involvement, family structure, parental communication) and intrapersonal-level characteristics to determine an individual’s risk trajectory (Lightfoot and Milburn 2009; Dariotis et al. 2011; Romero et al. 2011; Marshall, Crepaz, and O’Leary 2010). Yet, despite a growing body of STI research that incorporates this multi-level framework of influence, questions still remain as to how different levels interact with one another to produce or protect against STI risk.

Sexual networks, or groups of people linked through sexual contact, are one mechanism through which individual level sexual behavior may interact with interpersonal dynamics and environmental factors to propel racial disparities in STI incidence and prevalence. Recent studies have demonstrated a significant association between race and STI infection, independent of individuals' socioeconomic status, condom use, and number of sex partners (Dariotis et al. 2011; Hallfors et al. 2006). Differential patterns of sexual mixing, including higher rates of concordance by race and discordance by sexual risk group among African Americans compared to Whites, have been proposed as one explanation that may account for persistent disparities (Laumann and Youm 1999). Perhaps most influential however, may be the relatively high prevalence of concurrent sexual partnerships, defined as having two or more sexual relationships in overlapping time periods, in African American communities (Adimora, Schoenbach, and Doherty 2007; Morris et al. 2009; Adimora et al. 2011).

### ***Concurrent Sexual Partnerships***

Evidence suggests that concurrent sexual partnerships may increase the rate of spread of STIs within a sexual network and an individual's own risk of acquiring an STI, even after controlling for number of sex partners (Potterat et al. 1999; Rosenberg et al. 1999; Morris and Kretzschmar 1997, 1995; Gorbach, Drumright, and Holmes 2005). A 2006 case-control study found that heterosexual adults with a non-monogamous sex partner were 2.9 times more likely to be infected with HIV than those who did not report sex partner concurrency (Adimora et al. 2006). Similarly, a 2004 study of young adult heterosexual partnerships found that participants with a non-monogamous partner were 3.6 times more likely to have a current STI than participants with a monogamous sex partner (Drumright, Gorbach, and Holmes 2004). Patterns of concurrency have population-level implications as well. In a simulation study of sexual networks, Morris and Kretzschmar (1997) illustrated the exponential effects of concurrency on the growth rate of an HIV epidemic. By transforming only 25% of sequential monogamous partnerships into

concurrent partnerships, the epidemic was three times as large after a five-year period (Morris and Kretzschmar 1997).

Concurrency poses increased risk of STI transmission over serial monogamy due to partner sequencing patterns. With sequential partnerships, a later sexual partner is more likely to be exposed to an infected index partner than an earlier partner, conferring additional protection upon earlier partners. Additionally, there may be delays between the end of one sexual partnership and the beginning of another, slowing the spread of the disease. Conversely, with concurrent sexual partnerships, all sexual partners are exposed simultaneously to an index partner who is infected with an STI and the average time to secondary transmission is reduced (Morris and Kretzschmar 1995; Adimora and Schoenbach 2005). Notably, the additional risk of STI acquisition posed by concurrency, compared to sequential sexual partnerships, is borne by the sex partner of a concurrent individual, not by the individual (or “index partner”) herself, thus making “sex partner concurrency” of particular interest to STI researchers (Morris 2001).

### ***Sexual Concurrency among African Americans***

Sexual concurrency is a particularly salient risk factor for STIs among African Americans. Among participants in a large-scale national survey, Black men were over 2.5 times more likely to report having had concurrent sexual partnerships in the past year than non-Black men and Black women were 1.8 times more likely to report concurrency than non-Black women (Adimora, Schoenbach, and Doherty 2007; Adimora et al. 2011). Similarly high rates of concurrency were found in a household survey of sexually active African American adolescents living in Baltimore City. Index partner concurrency (participant’s personal concurrency) was reported by 42% of males and 24% of females while 17% of males and 24% of females reported sex partner concurrency (concurrency of the participant’s sex partner) (Polk et al. 2011). These trends may not only help to explain observed racial disparities in STI prevalence but may predict an even greater chasm in the future. Modeling data from a nationally representative survey,



Morris and colleagues estimated a 160% disparity in predicted HIV incidence between Blacks and Whites over a ten year time period, assuming current reported rates of concurrency (Morris et al. 2009).

Thus far, researchers have generally focused on poverty and the sex ratio as the main contextual drivers of concurrency within the African American community. Scholars have argued that the low male to female ratio, resulting from high rates of mortality and incarceration among young men, contributes to lower rates of marriage and decreases power among heterosexual females to establish monogamous sexual relationships (Aral, Adimora, and Fenton 2008; Adimora and Schoenbach 2005). Additionally, economic vulnerability, which is more common among African Americans, is believed to destabilize romantic relationships and decrease men's interest in entering into the financial responsibilities of marriage (Aral, Adimora, and Fenton 2008; Adimora and Schoenbach 2005). Related to both of these factors, but less well understood, is the nuanced relationship between socioeconomic context, gender role beliefs, partner dynamics, and sexual concurrency. This multi-level interplay between socioeconomic forces, normative beliefs, interpersonal dynamics, and sexual risk behavior may be fundamental in determining how and to what extent poverty and sex ratio imbalances translate into sexual risk behavior among adolescents.

### ***Gender, Power, and STI Transmission: Theoretical Foundations***

Historically, researchers have understood gender through two broad theoretical perspectives: the “trait perspective”, which centers on the extent to which males and females have qualities or characteristics that are culturally understood to be masculine or feminine, and the “normative perspective”, which focuses on the extent to which males and females believe that they should have certain characteristics defined by their culture as masculine or feminine (Pleck, Sonenstein, and Ku 1993). While the former assumes that males and females naturally possess certain stereotypical traits, the latter suggests that gender is produced through an exchange of ideas about

how men and women should act (Gerson and Peiss, 1985 in (Courtenay 2000)). Most current scholars have adopted a “normative perspective” to understanding gender roles, the social and behavioral norms and expectations associated with being a male or female.

Relationship power, defined as having the ability to act or to have influence over others is closely bound to gender roles (Wingood and DiClemente 2000). In the theoretical and empirical literature, relationship power has been conceptualized as arising from several domains including emotional intimacy, decision-making, and economics (Waller 1937; Connell 1987; Emerson 1976). In the 1930s, Waller’s “Principle of Least Interest” posited that the partner who is least emotionally invested in a relationship is also most likely to hold control (Waller 1937). “Social Exchange Theory” (Emerson 1976) built on this principle by highlighting interpersonal expressions of power including dominance in decision-making and engaging in behaviors with which the other partner disagrees. Connell’s “Theory of Gender and Power” (1987) provides a more comprehensive framework for understanding heterosexual relationship power by delineating three key social structures that organize gendered relationships between males and females: sexual division of labor (i.e. assignment of men and women to different types of work), sexual division of power (i.e. distribution of power between males and females), and the “structure of cathexis” (i.e. social norms surrounding intimacy and sexuality) (Wingood and DiClemente 2000).

### ***Gender Role Beliefs and Sexual Risk Behavior***

A small but growing body of qualitative and quantitative literature suggests that inequitable gender role beliefs, which favor one sex over the other, may be linked to STI risk in adolescents and that this relationship may manifest itself differently in males versus females. In various populations in the United States, early sexual debut, inconsistent condom use, and high numbers of sexual partners have been associated with less equitable gender role beliefs among young men (O’Sullivan et al. 2006; Pleck and O’Donnell 2001; Pleck, Sonenstein, and Ku 1993; Santana et

al. 2006). In a large, national study of 15-19 year old Americans (N=1069), males who held more traditional attitudes toward masculinity (e.g. “a guy will lose respect if he talks about his problems”) were less likely to use condoms consistently and reported significantly more sexual partners in the past year (Pleck, Sonenstein, and Ku 1993). A smaller study of 18-24 year old college students in New York City (N≈200) found that men’s endorsement of traditional gender roles related to sexual activity (e.g. “in new relationships, women should wait for men to initiate sex”) was associated with having had a higher number of sexual partners in the past two months (O’Sullivan et al. 2006). Additionally, in a study Hispanic and African American middle school students (N=587), traditional gender role beliefs were associated with ever having had sexual intercourse among males (Pleck and O'Donnell 2001).

Less quantitative research in this area has been conducted among female adolescents although, a few studies suggest that gender role beliefs among females may be linked to sex partner concurrency, multiple and casual sex partnerships, and early sexual debut (Kerrigan et al. 2008; Pleck and O'Donnell 2001; Leech 2010). In the same study of urban middle school students, Pleck and colleagues found that, among females, ascribing to traditional beliefs about masculinity was associated with ever having had sex (Pleck and O'Donnell 2001). A clinic-based study of female African American adolescents (N=155) revealed that participants who subscribed to traditional beliefs regarding femininity were significantly more likely (OR=2.8; 95% CI: 1.01-4.3) to report their male sex partner had concurrent female sexual partners (Kerrigan et al. 2008). Additionally, a nation-wide study of 520 sexually active 18-19 year old American women found that both very traditional and very equitable gender role attitudes were associated with multiple and casual sex partnerships among females (Leech 2010).

Although only one known study has quantitatively assessed the association between gender role beliefs and concurrency, qualitative studies have highlighted some of the contextual factors that may influence this relationship. Ethnographic research among urban African Americans suggests that individual and relationship-oriented gender role beliefs may drive young

urban men towards concurrent sexual relationships while simultaneously compelling female partners to accept their behavior. Virility and toughness among males (Carey et al. 2010; Kerrigan et al. 2007; Senn et al. 2011) and emotional strength, commitment, and care-taking among females (Kerrigan et al. 2007; Towner, Dolcini, and Harper 2012) have been identified in the literature as “ideal” sex-specific qualities which may facilitate concurrency. Within heterosexual partnerships, attitudes regarding male dominance in romantic relationships, need for emotional intimacy, and power over decision-making may also be of consequence (Nunn et al. 2012; Nunn et al. 2011; Senn et al. 2011).

### ***The Role of Socioeconomic Context***

Studies suggest that socioeconomic context may play an important role in shaping gender-related beliefs. The majority of this research is based among low-income African Americans (Kerrigan et al. 2007; Secor-Turner et al. 2011; Tsui et al. 2008; Whitehead 1997) and highlights the distinct pathways between gender and STI risk that emerge from the intersection between race and socioeconomic status. The ethnographic research of Tony Whitehead (1997), for example, describes how limited economic opportunity for low-income urban African American males has discouraged long-term relationships by preventing males from living up to the financial expectations of partners and driven a redefinition of masculinity in the form of sexual risk behavior (e.g. concurrency and inconsistent condom use) and drug trafficking (Whitehead 1997). In Nunn et al.’s (2012; 2011) work with low-income urban African American females, sexual relationship concurrency was identified as a practical means for women to gain material support from male partners in times of economic vulnerability.

### **RATIONALE FOR RESEARCH**

The reduction of racial disparities in STIs requires a comprehensive approach to disease prevention that addresses the root causes of transmission. A growing body of literature suggests

that high rates of sexual concurrency may contribute to African American adolescents' heightened risk for sexually transmitted infections and that gender role beliefs may be an important driver of this sexual risk behavior. Although a number of studies point to a connection between gender ideology and STI risk, a more detailed picture of the sociocultural and economic context of this relationship has yet to emerge.

To date, the majority of studies that explore the linkages between race, gender role beliefs, and sexual behavior are concentrated within a single racial group or combine racial/socioeconomic subgroups, masking the unique characteristics of gender ideology within subpopulations and obscuring potential differences in observed associations based on sociocultural context. Further, only one known study, among African American female adolescents, has quantitatively assessed the association between gender role beliefs and sexual concurrency (Kerrigan et al. 2008).

This study fills a gap in the literature by providing a more nuanced understanding of the ways in which socioeconomic context shapes gender role beliefs among low and middle SES African American adolescents. It further examines how the construction of gender ideology and its subsequent relationship to sexual concurrency differs between African American and White adolescents. Understanding the nature of these phenomena and their differential impacts on sexual risk behavior may be an important step towards reducing racial disparities in STI transmission.

## **CONCEPTUAL FRAMEWORK**

This dissertation was guided by a conceptual framework that is based on the existing theoretical and empirical literature surrounding gender role beliefs and sexual risk behavior. Figure 1.1 illustrates the interconnected nature of race, socioeconomic status, and gender norms among African American adolescents. It further shows the hypothesized pathways between attitudes towards power in relationships and sexual concurrency among heterosexual African American

adolescents and displays the factors that are hypothesized to mediate--relative power in the relationship--and moderate—SES, race, and relationship type—this relationship. Figure 1.2 surmises how the relationship between the exposure and outcome variables will differ by participants' sex.

## **STUDY AIMS**

The aims of this dissertation research are:

**Aim 1:** To qualitatively explore the ways in which social and economic instability, characterized by transitions and crises at the individual and community levels, shape the gender role beliefs of African American adolescents in Baltimore, MD.

**Aim 2:** To assess the psychometric properties of the Power and Attitudes in Relationships (PAIR) scale and to test the association between PAIR scale score and having a risky partnership in a household sample of White and African American male and female adolescents in Baltimore, MD.

**Aim 3:** To quantitatively examine whether concurrency within heterosexual partnerships is associated with participants' attitudes towards relationship power and to assess whether this relationship varies by race/ethnicity, SES, and/or type of partnership in a household sample of adolescents in Baltimore, MD.

## **DISSERTATION OVERVIEW**

This dissertation consists of five chapters organized around three manuscripts focusing on different aspects of gender role beliefs and concurrency among adolescents in Baltimore, Maryland.

*Chapter 1* (Introduction) provides an overview of the issues pertinent to STIs, gender ideology, and sexual concurrency among African American adolescents. It also outlines the aims, rationale, and conceptual framework for this research.

*Chapter 2* (Manuscript One), titled *Socioeconomic Instability and Gender Ideation among Urban African American Adolescents*, is a qualitative analysis of data collected from in-depth interviews with 32 low and middle SES African American adolescents in Baltimore, MD. This analysis explores the ways in which social and economic instability, characterized by transitions and crises at the individual and community levels, shape adolescents' gender ideology.

*Chapter 3* (Manuscript Two), *Power in Heterosexual Relationships and Sexual Risk Behavior among Adolescents: Differences between Whites and African Americans in Baltimore, MD*, is a quantitative analysis of household survey data collected from 272 African American and White adolescents in Baltimore, MD. This analysis assesses the psychometric properties of the Power and Attitudes in Relationships (PAIR) scale among African American male and female heterosexual adolescents in Baltimore, MD and compares the results to White heterosexual adolescents in the same city. It further tests the association between PAIR scale score and having a risky partnership within each of these subpopulations.

*Chapter 4* (Manuscript Three), titled *Attitudes towards Power in Relationships and Concurrency within Heterosexual Adolescent Partnerships in Baltimore, MD*, is the final manuscript. This quantitative analysis uses partnership-level data (N=462) from the same household survey to test whether sexual concurrency within heterosexual partnerships is associated with participants' attitudes towards relationship power and to assess whether this association varies by race. SES

and partner type are also examined as moderators of this relationship. Results from stratified multivariate logistic regression analyses are presented.

*Chapter 5* (Discussion) presents conclusions drawn from this study, suggestions for future research and public health implications of the study's findings.



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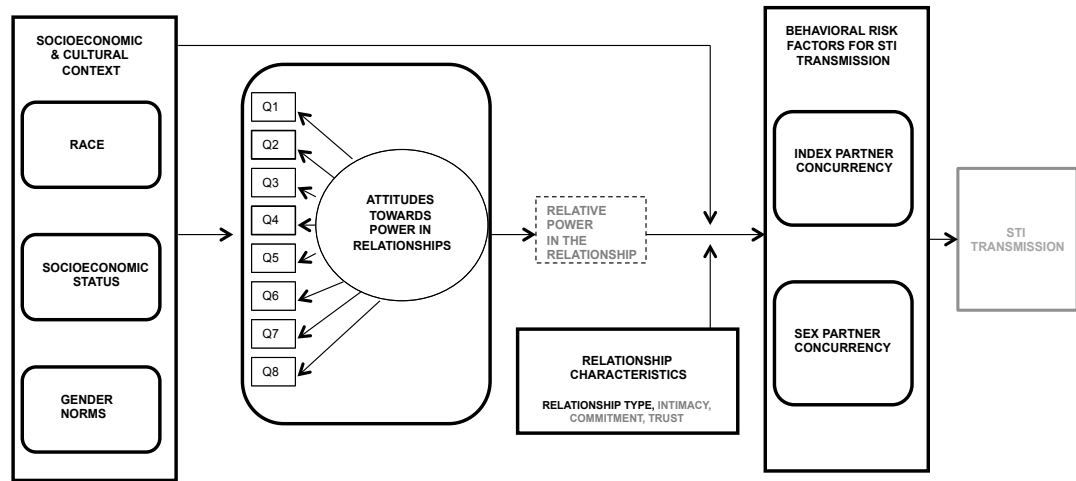
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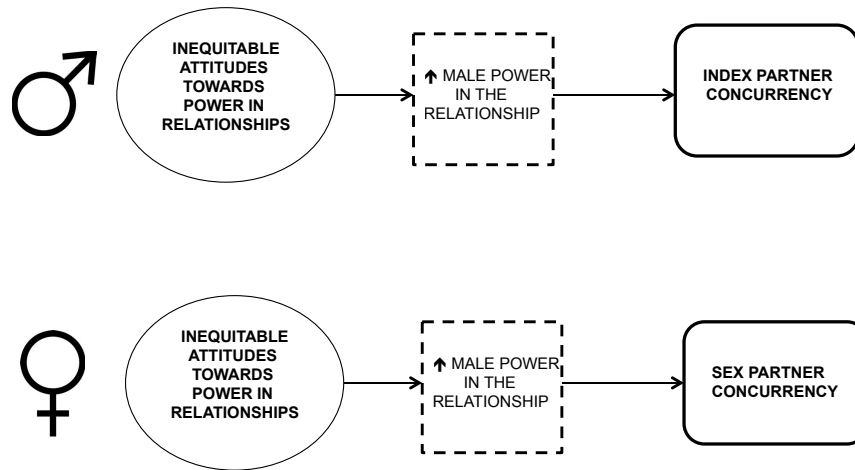
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**Figure 1.1. Conceptual Framework for the Relationship between Attitudes Towards Power in Heterosexual Relationships and Sexual Concurrency among Urban African American Adolescents**





**Figure 1.2. Conceptual Framework for the Relationship between Attitudes Towards Power in Heterosexual Relationships and Concurrency among Urban African American Adolescents by Sex**



\*Index partner concurrency is defined as participant report of two or more sex partnerships overlapping in time. Sex partner concurrency is defined as participant report of a sex partner having two or more sex partnerships overlapping in time.

## **CHAPTER 2: MANUSCRIPT ONE**

### **Socioeconomic Instability and Gender Ideation among Urban African American Adolescents**

## INTRODUCTION

Adolescence is a critical juncture in human development in which early life experiences are translated into personal ideology (Erikson 1959; Marcia 1980). Social and economic experiences leading up to and during adolescence may, therefore, play an important role in shaping youths' beliefs, values, and expectations during this critical period of life, setting the foundation for adolescents' subsequent health trajectories (Wickrama, Conger, and Abraham 2005).

In the past five decades, the proportion of American children living in single-parent homes has increased from 9% to 27% with over half of African American children living with one or no biological parents (Kreider 2008). Thirty-four percent of African American children, compared to 18% of all children live below the poverty line (Kreider 2008) and 47% of unstably housed children are African American, despite comprising only 15% of American children (The National Center on Family Homelessness 2011; The Federal Interagency Forum on Child and Family Statistics 2012).

A growing body of literature recognizes the importance of social and economic context in explaining racial disparities in health outcomes (Hallfors et al. 2007; Adimora and Schoenbach 2005, 2002; Adimora et al. 2001; Williams 2006). African American adolescents are at heightened risk of sexually transmitted infections (STIs), for example, when compared to their white counterparts (CDC 2010). Quantitative efforts to disentangle this relationship between race, socioeconomic status (SES), and STIs have largely simplified the construct of SES, utilizing static indicators for poverty, education, and family structure while ignoring the time-varying and cumulative nature of these effects and the interactions between them (Dariotis et al. 2011; Ellen et al. 1995; Hallfors et al. 2007).

Social instability is the lack of structure, certainty, and consistent routine that results from unsteady life circumstances. The domains that comprise social instability are both social and economic, including employment, poverty, family structure, substance use, and incarceration (German and Latkin 2012b; Bouhnik et al. 2002; German and Latkin 2012a). These factors are

strongly associated with STI risk (Jennings et al. 2012; Kilmarx et al. 1997; Cohen et al. 2000; Thomas and Gaffield 2003; Cohen et al. 2003). Kilmarx and colleagues, for example, found that over a nine-year period, percentage of divorce, female-headed households, and unemployment were strong predictors of syphilis prevalence at the county-level (Kilmarx et al. 1997). Similarly, a study conducted in Philadelphia found that people experiencing homelessness or housing instability were more likely to have AIDS than stably housed people (Culhane et al. 2001).

Some researchers have pointed to synergies between social vulnerabilities, suggesting that the cumulative nature of social and economic crises may be more important in predicting health outcomes than their independent effects (German and Latkin 2012b, 2012a; Hatch 2005; O'Leary 2001). This co-occurrence of adversities may intensify the experience of each individual crisis and diminish important protective resources that facilitate resiliency (Hatch 2005). German and Latkin (2012) evaluated the effects of “accumulated vulnerability” in the form of incarceration, low-income, and housing instability, on HIV risk behaviour among primarily African American women in Baltimore. They found an “additive” effect of social instability such that an individual’s likelihood of participating in STI risk behaviour increased with each additional domain of instability (German and Latkin 2012b).

It has been hypothesized that gender ideation, or individuals’ beliefs and expectations associated with being male or female, is a critical link between the more distal influence of social instability and sexual risk behaviours (Pleck, Sonenstein, and Ku 1993). The research of Whitehead, Bourgois, and others suggests that limited economic opportunity has forced males to redefine masculinity through compensatory ideals of toughness and sexual prowess, expressed through sexual risk behaviour such as inconsistent condom use and concurrent sexual partners (Kerrigan et al. 2007; Bourgois 1996; Tsui et al. 2008; Whitehead 1997). Females, striving to achieve the ideals of emotional strength, financial stability, and caretaking, have accepted this behaviour on the part of male partners rather than terminating their relationships (Kerrigan et al. 2007; Tsui et al. 2008). This interaction between socioeconomic status and gender may extend

into reproductive outcomes. For some adolescents, becoming a parent has been identified as a pathway to adulthood and a strategic choice to maximize benefits within settings characterized by social and economic vulnerability (Kelly 1994; Edin, Kefalas, and Reed 2004).

Discussions of the relationship between gender and SES among adolescents have largely defined socioeconomic context within the boundaries of poverty and employment opportunities while missing the more nuanced, cumulative nature of social instability. This issue is particularly salient in a city such as Baltimore where residents, the majority of whom are African American, experience a range of social and economic disadvantages: 22% of people live below the poverty line, 9.7% are dependent on alcohol or illicit drugs, and, on any given day, 4,000 people are homeless and 28,000 interface with the corrections system (La Vigne et al. 2003; SAMHSA 2010; Walsh 2010; Health Care for the Homeless 2011).

This study seeks to advance our understanding of the influence of socioeconomic status on gender ideology formation by examining the dynamic, interconnected forces that constitute instability in the lived experiences of African American adolescents in Baltimore City. It explores the ways in which social and economic instability, characterized by transitions and crises at the individual and community levels, shape adolescents' gender ideology.

## **METHODS**

From June through December 2011, a qualitative study was conducted with thirty-two sexually active African American adolescents in Baltimore, MD, aged 18 to 24. This study was connected to a larger longitudinal study of African American and White adolescents aimed at empirically testing the relationship between socioeconomic status, race, gender role beliefs, and sexual risk behaviour.

Participants were recruited from urban shopping malls and a public university located in Baltimore. All participants were approached individually and explained the purpose of the study before being screened for eligibility. Inclusion criteria were: aged 18-24; engaged in a

heterosexual relationship (including vaginal, anal, and/or oral sex) for longer than three months in the past three years; and lived in Baltimore. Adolescents were sampled purposively by sex, race, and SES (eight low SES females; eight low SES males; eight middle SES females; eight middle SES males). Participants' SES was determined by asking adolescents whether the residence they spent the most time in growing up was owned (yes=middle SES), whether they received free lunch in school (no=middle SES), and whether their primary caregiver completed any college (yes=middle SES). If participants answered two or more questions as "middle SES", they were considered middle SES. Otherwise, they were considered "low SES". Participants' average age was 19 years old. Forty-eight percent had a caregiver with no college education and 66% received free school lunch as a child. Fifty-three percent of participants reported that their childhood home was owned.

Written informed consent was obtained from all participants prior to the first interview. Interviews were conducted in the mall food court, university's student center, or on a public bench near the location of recruitment. The three study staff who conducted interviews were female graduate students in their late 20s, two of whom identified as White and one who identified as multi-ethnic. Two in-depth interviews were conducted with 30 participants, with two participants (one low SES male and one low SES female) completing the first interview only. Interviews were semi-structured and facilitated through the use of an interview guide. Two separate interviews were conducted to allow increased rapport to develop between the interviewer and interviewee and to minimize participant fatigue. The first interview explored participants' experiences with gender and SES growing up including family structure, role models, parental expectations, perceptions of being a man/woman, and perceived class membership. The second interview explored participants' self-perceptions, visions of the ideal romantic relationship, dynamics (power, control, and decision-making) in their most recent romantic relationships, and sexual decision-making. Topics generally moved from less to more sensitive, however interviewers were permitted flexibility to discuss topics as they naturally arose and probe relevant

information that was not anticipated by the guide. Interviews lasted 40 to 90 minutes.

Interviewees received \$25 pre-paid debit cards for participating in the first interview and \$35 for the second interview. Interviews were tape-recorded and transcribed verbatim by a professional transcription company. The study was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

Interpretations of the data were recorded throughout the qualitative study period to provide context for data analysis. Analysis was informed by a deductive approach in which themes were established a priori by the study's research questions, the interview guides, and relevant theory, and through an inductive approach in which themes emerged from the data itself. To minimize biases that could arise from a single researcher's perspective, the three qualitative interviewers were involved in the coding process. We selected a cross-section of six interviews that were coded using an open coding method. Topics were identified then grouped into larger themes, which were further organized into a coding scheme. To ensure consistency, four additional transcripts were coded based on the new coding scheme and transcripts were compared. When disagreements over coding or new themes arose, they were discussed as a group and the coding scheme was modified. All transcripts were coded using *Atlas.ti* version 7.0 (Scientific Software Development 2012), qualitative data analysis software that assists in organization and retrieval of interview data. Data were compared across and within cases to identify common experiences while also recognizing the uniqueness of each individual's account. Particular attention was given to differences based on gender and class. The paper writing process was informed by frequent consultations with the study team.

The researchers sought to understand the data not from a strictly positivist perspective, but as representing participants' experiences as they chose to convey them to outsiders. Reflexivity was exercised throughout data analysis, grounded in the recognition that our own backgrounds and personal biases could affect the nature of data collected and conclusions drawn from it.

## RESULTS

### *Conceptual framework*

Drawing on findings from this study, we developed a conceptual framework depicting the relationship between socioeconomic instability and gender ideology among urban African American adolescents. Our study found that financial, housing, and family uncertainty pervaded the lives of adolescents, often compelling their families to rely on social networks for material support. This instability at the household and community levels was a powerful influence on the formation of participants' gender ideology, which was conceptualized, largely, in reaction to the insecurity of their lived environments. "Being a man" or "being a woman" meant achieving the ideals of financial security and a stable family life. For participants, transitioning into adulthood required resilience: the ability to persevere through adversity and cast aside social support to create a life that was structured, certain, and consistent (Figure 2.1).

### *Social and economic instability*

Adolescents portrayed childhoods characterized by financial strain, an inconstant family structure, and housing instability, which were constantly interacting to create a "web of structural vulnerability" in adolescents' lives (German and Latkin 2012b, 2012a). Economic vulnerability was often the driving force behind changes in residence that, in turn, altered the structure of participants' immediate families. In a number of cases, these social disadvantages both drove and were exacerbated by parental drug use and incarceration. The experience of one 20-year-old female illustrates the interplay between these factors:

*Well, it's like I lived with my mother and my grandmother. 'Cause my mother used to do drugs. So, that's when I was, like, 11...one day I was coming home from school and my mother kept crying, and I kept saying, "What's wrong?" And she ain't wanna tell me that she ain't paid the rent. So when she came and got us from*



*school, we walkin' down the street, and all our stuff was sitting in the street. But I had four, well at the time, three brothers and sisters that was living with me and my mother. And so, my little brother and my sister-, my little sister, she wound up going living with her grandmother. My little brother wound up going, living with his father. But they ain't leave right away like I did. Like, soon as I got there, my grandpa was already there to pick me up. So I had to leave them. And it's like, after that, all us separated. And like, a year later, my mother got locked up. And, then I just wound up living with my grandma forever.*

Fluctuation of family structure was a common experience across interviews. For many participants, the role of primary caregiver shifted between birth parents, grandparents, foster parents, siblings, and extended family. These changes were often driven by socioeconomic crises such as incarceration, drug use, extreme poverty, and divorce. In some cases, as illustrated in the example above, non-parent caregivers took on the permanent role of parent in adolescents' lives. In others, they stepped in for shorter periods of time until the crises subsided:

*I first grew up with my grandmother because my mom was in a situation that she had to work herself to get out of as far as using drugs and narcotics. And my grandmother raised me basically since I was about 12-years-old. And my mom, she got clean and took custody of me, my brother, and my sister. And all the way to age 18 I stayed with my mother until I moved out on my own. (Male, 20-years-old)*

For youth who entered the foster care system, this change could be more frequent. A male adolescent described his experience:

*My mother, she was cool, she was nice, I guess... she cares, you know but like when I*

*moved out there were a lot of allegations of her, like being a drug user and things of that nature, so yeah...I was in foster care, so I moved from place to place to place. I know I had one foster parent for eight years, and after that I started moving from place to place.*  
(Male, 18-years-old)

A changing family structure, itself, could also be the source of financial strain in participants' lives. Many youth described families consisting of several siblings, often from different biological fathers who had varying levels of involvement in their children's lives. For some adolescents, this created a revolving door of male "father figures" in which men entered their lives and homes for a period of time, often bringing increased financial stability to the family, then exited, leaving the mother as sole caretaker and breadwinner. As a result, some participants recalled seeking paid work at a young age in order to help alleviate their family's economic distress. Although most participants gained lawful employment, a few described turning to the drug trade to earn money:

*I mean school was good. I just, at the time I thought it couldn't offer me nothing. Like I say, my mother got 9 kids, and it was only her ain't no baby fathers, so I am the oldest. I gotta do something to get money. That's another reason selling drugs came about.* (Male, 24-years-old)

Accompanying these changes in family structure were often changes in residence. A few participants described situations in which their homes were opened up to aunts, uncles, and cousins. More often the adolescents themselves were moving, rotating between the homes of parents, grandparents, and other relatives. For many adolescents, this social network became a source of instrumental support (in the forms of food, shelter, and childcare) in times of economic and social crisis, providing their families with relief necessary to regain stability.

*Growing up I had a really- not rough childhood but like we didn't have nowhere to stay...she'd tell me sometimes like we stayed from house to house or she had to struggle like far as I don't know like working I guess and trying to take me to daycare... up until she moved with my [step-father's mother]. When she moved in with my grandma and my dad, then things got better, she was able to go to work and my grandma would watch me, and then she made enough money eventually to move out, and get her own house and our own car and everything else. (Female, 18-years-old)*

### ***Socioeconomic instability and the shaping of gender ideology***

Across interviews, participants conceptualized gender in reaction to the social and economic instability of their lived environments. Adolescents' gender ideology was grounded in the concepts of stability and security with "taking responsibility" highlighted as the primary quality that distinguished men from boys and women from girls.

For male participants, the "ideal man" was financially stable, law-abiding, and a provider for his partner and children. Attaining steady employment and stable housing were perceived as necessary requisites to achieving this ideal. When asked whether he identified as a man, an 18-year-old male summarized a common sentiment:

*I'm still working at it...I gotta be on my own, in my mind, and be like, therefore called "a man," 'cause a man has his own everything. So once I get my own, I'll be fine.... Like my own place, car, and...a good job – to help take care of what I need to take care of - care of my responsibilities.*

The idea of having “one’s own” permeated almost every male’s expression of gender ideology. For adolescents who grew up relying on others’ resources to persevere through economic and social crises, transitioning into adulthood was symbolized by casting-aside social support to achieve total independence. As one male described,

*A man has to be strong for his family and himself, showing that, how can I say this. Responsibility...Don't be dependent on nobody, because at the end of the day the only person you have is yourself. (Male, 18-years-old)*

Female adolescents’ vision of the “ideal woman” was held to similar standards of independence. Participants embraced the image of the iconic “strong black woman” (Romero 2000), praising self-reliance and perseverance through adversity. Like males, females considered financial and housing stability essential to achieving this ideal. When asked whether she identified as a woman, one participant responded:

*I don't know if I would call myself a woman, and I'm not independent...financially stable. It's like...my refund checks take care of me, 'cause, I mean, no one takes care of me. Right now, my sister is giving me a place to stay, but that's it. And my mom gets food assistance. So that's how I eat. Or if I don't, I always have money left over from my refund check. So I'm eating off that...I do everything for myself. So as far as me being responsible, I definitely don't depend on nobody. (Female, 19-years-old)*

For both males and females, “taking responsibility” extended beyond economic and housing stability into the family realm. Male participants believed that creating a stable family environment required limiting the number of children they have, the number of sexual partners they have children with, and providing for offspring. Particularly among males who did not have

stable father figures in their lives, the provision of financial support and fatherly guidance to children were perceived as key attributes of the ideal male. The emotional drama and financial strain created by having multiple children with different partners was seen as a threat to family stability.

*I just want to be there for my family and to pick up my responsibility to take care of my kids ... And what I notice now, so there's some of my friends, right, they have like, baby mothers and all that, then they be having a lot of drama, arguments and all that. I don't want none of that problems; I want peace in my house and I don't want my kids to be all around... scattered all around the area. (Male, 20-years-old)*

For female participants, maintaining a monogamous relationship with a partner, limiting parity, and providing for children were considered fundamental to achieving family stability. Almost every female interviewed desired a partner who would serve as a constant father figure for her children. When asked what she looked for in a partner, a 19-year-old responded:

*Just take care of his responsibilities. You know, teach them right from wrong. If it's a boy, I can't teach a boy how to be a man. So I expect him to do that. Even if you have a girl... I think it's important for them to have fathers in their lives to see what a man role is to be. Like, how it go. So when she get older, she can make better decisions in relationships. So as far as that...just to have...stability in the home.*

A vision of the ideal woman was expressed directly and indirectly by participants through discussions regarding reputation. When asked about the importance of reputation among females, many participants immediately jumped to themes of sexuality and fertility:

*Reputation is important, especially these guys like, they might not know you from the beginning, but if they start hearing your name around....And especially if you have kids like already. I'm not bashing anybody; it's okay to have one child. But if you have four kids and you're twenty-four, yeah, your reputation doesn't really look too good. (Female, 20-years-old)*

Even among females who had already given birth, the ideals of low parity and responsibility for offspring persisted. One 18-year-old mother who became pregnant at sixteen as a result of a one-night stand described her situation:

*Although I had a son at a very early age that was probably my first and might even be my last child. I take care of him. I don't dump him off on everybody like everybody else does. I have a good job.*

Although both males and females tied gender ideologies to expectations regarding fertility, there was a divergence in ideals related to sexuality for men versus women. For females, limiting sexual partners was essential for maintaining respect in the community. In fact, the *emic* term “dummy” was reserved for women who did not fit this standard for the ideal female:

*Like in the African American community, I don't know what they say in others, but if a woman or a girl has slept with a lot of men, she'll be labeled as a dummy and once you get that label, no one wants to be with you, no one wants to make you their girlfriend, they just want to use you for what they have heard. (Female, 18-years-old)*

Among males, sexuality was rarely discussed spontaneously as a key attribute of the ideal man. However, when pressed to differentiate expectations surrounding sexuality between males and

females, an 18-year-old male summarized a common sentiment:

*For men, it don't even matter - like sexual if you got a bad reputation, like you get around as a guy, I mean it don't even matter. A lot of females ain't going to care. We ain't going to care either. Ain't nobody going to look at a guy like "no slut", not like that, you just being a man.*

### ***Community context, socioeconomic instability, and gender ideology***

Among respondents, the concepts of social and financial instability were closely tied to the urban African American population they came from. Both males and females conveyed a picture of the African Americans as uneducated, jobless, and economically deprived. For males, this image was linked to crime, violence, drugs, and incarceration. As a 20-year-old male participant described, "African Americans being locked up, getting caught up in like, stealing, violence, robbing, driving like them dirt bikes and all that doing... not going to school, drinking and smoking, all of that." For females, there were added dimensions of fertility and sexuality, expressed through high parity at a young age:

*Most females my age in Baltimore City is like having kids left and right, no education, dropped out of school, on welfare, won't even work because they learned that from their parents...low self-esteem, looking for somebody else to take care of her.*  
*(Female, 18-years-old)*

The very population that participants came from thus served as a negative role model against which they defined their vision for the ideal man and woman. When asked to describe how they relate to being African American, participants overwhelmingly positioned themselves as an

exception to a rule, making efforts to distinguish their own behaviours from the predominant image they held of African Americans.

*When people see young African American girls they think of like poverty and they think sexually active, and not going to school, no job, welfare, stuff like that. And that's just- that's never been about me. I've always been about education and working, like I said, making sure I'm not on welfare. (Female, 18-years-old)*

*I kinda don't fit in with the typical perception of a 19-year-old African American. Like, most of us don't finish high school. Or have like a record.... So, being as though I have no criminal background record, I'm in school, I'm furthering my education, I finished high school, I'm about to finish college, and...I don't have any substance abuse on my record or in my history, I feel as though I'm like...beating the system, almost. Or beating the stereotype. (Male, 19-years-old)*

Becoming a man or woman required participants to transcend a stereotype they held of urban African Americans that was fundamentally opposed to their standards for adulthood.

***Resilience: the pathway to becoming the “ideal man” or “ideal woman”***

For youth whose childhoods were situated within a community and household context characterized by movement, uncertainty, and dependence on others, resilience was seen as a vehicle to escape the cycle of economic and social instability that had governed their lives. The majority of participants identified resilience as a quality they admired in others and sought to cultivate in themselves. The ability to persevere through and rise above adversity was praised by



male and female participants who saw this as a pathway to becoming the ideal man or ideal woman.

*A lot of people make excuses for what they do or excuses for how their life turned out. But she used it and it just made her push harder. Got out of high school, everything like...you can't help but admire because you're like "you've been through so much, but you still just continue to push on" and that's good. Just don't let it stop you.*  
(Female, 19-years-old)

Many participants saw their own lives reflected in the lives of their role models and considered resilience a necessary attribute for transitioning into a more stable life. When asked to describe her role models, one participant said:

*All of them were just so strong mentally, and just like the stuff that they've been through and where they are now... they're able to move on. And I think I want to be like that. I want to be able to just move on from whatever... My mom, she lost her mom, and then for a while her family wasn't there for her, so she was basically on her own for a couple years. Then she had me, and then that was a burden on her, because she had me but she didn't have a mom to go to, so she was basically on her own. If you look at her now, she's doing okay for somebody that's been in that situation.* (Female, 18-years-old)

Resilience meant not only persevering through hardship but, in some cases, disconnecting from a perceived negative influence of family and friends. One 20-year-old male described this quality in his role model,

*He never gave up; like he actually followed his goals as if he really knew where he was... he knows that he's supposed to be there and that he actually did it by achieving his goals and not giving up and not let people around him influence him.*

For many youth, the concept of resilience was an integral component of positive self-perception.

When asked to what extent he's achieved the goals he set for himself, an adolescent male responded:

*I think I did a pretty good job. It wasn't the best job but everybody's not perfect and I'm just happy to say that I made it out of high school and I'm about to go to college and finish that. A lot of people where I come from don't even finish high school so... you got to do something with yourself. (Male, 18-years-old)*

Despite the desire to rise above the instability experienced in their childhoods and perceived of their community, adolescents often expressed gratitude for the environment they were raised in. These structures of vulnerability were, in some cases, believed to give participants the opportunity to achieve their ideals through the exercise of resilience. As an 18-year-old male described,

*Not having everything given to you when you're growing up, having to struggle...It actually teaches you how to deal with not having everything, how to strive for more. It just gives you certain values. Even though it was rough growing up. I feel as though it helped a lot.*

A female participant echoed these feelings:

*I think I've grown into a great woman. And I can definitely say my surroundings that made me who I am... my surroundings educated me. (Female, 19-years-old)*

## **DISCUSSION**

This study expands our understanding of the linkages between adolescents' formation of gender ideology and socioeconomic context by providing a more nuanced picture of how the relationship between social instability and gender manifests among urban African American adolescents. Despite variation among participants with regards to a number of socioeconomic indicators (ownership of childhood home, receipt of school lunch, caregiver's education), almost every adolescent interviewed described a life characterized by constant change and uncertainty. Participants experienced vulnerabilities that were cumulative and interconnected with periods of financial, housing, and family instability driven (or exacerbated) by family members' use of drugs or incarceration.

Despite being severely disadvantaged by socioeconomic conditions, adolescents strove for the ideals of stability, responsibility, and independence. To "be a man" was to be financially stable, law-abiding, and a provider for one's partner and children. "Being a woman" meant financial stability, maintaining a monogamous partnership, and limiting the number of children one had. For participants, the transition into adulthood required an assertion of independence: rising above adversity, relinquishing social support, and taking responsibility for their "own". Instead of reacting to their life circumstances by establishing new gender roles related to sexuality and fertility, as found in previous studies (Kerrigan et al. 2007; Tsui et al. 2008; Kelly 1994; Whitehead 1997), participants clung to mainstream American ideals, explicitly pushing-back against their stereotype of urban African American culture whose high birth parity, prevalence of multiple sex partners, and general economic deprivation was perceived as directly opposing these values. Adolescent pregnancy, which has been identified in other studies as a means to exercise control over life circumstances and gain access to resources (Edin, Kefalas, and Reed 2004; Kelly

1994), was instead seen as compromising one's chance of achieving a stable life. Among adolescents who were already parents, having a child was an impetus to recommit to these ideals.

Adolescents who experienced instability throughout their lives valued resilience as the pathway to becoming the ideal man or woman. Resilience has been defined as positive adaptation in the face of hardship (Kolar 2011) and has been recognized as an important predictor of positive mental and physical health outcomes (Beasley, Thompson, and Davidson 2003; Soderstrom et al. 2000; Zimmerman, Ramirez-Valles, and Maton 1999; Fergus and Zimmerman 2005). Although disagreement exists in the literature about whether resilience should be considered a process or an outcome (Kolar 2011), our findings indicate that among African American adolescents, the concept captures both these dimensions. Resilience was considered the mechanism through which adolescents could overcome challenging life circumstances to achieve their gendered ideals. As a female participant described, "you've been through so much, but you still just continue to push on". However, it was also considered an attribute in itself, worthy of pride and an integral component of manhood or womanhood. This perseverance has been recognized in the literature as a central component of gender ideology among African American females (e.g. the iconic image of the "Strong Black Woman") (Romero 2000) however, this is one of the few studies to identify resilience as a keystone of male gender ideology (Teti et al. 2012).

As other researchers have acknowledged, individuals' perpetuation of ideals related to economic success and family stability does not necessarily connote their ability to promote positive adaptation to challenging life circumstances (Kerrigan et al. 2007; Tsui et al. 2008; Kelly 1994). The gender ideology espoused by participants is situated within a broader historical, political, economic, and social context that makes it exceptionally difficult for urban African American adolescents to achieve these ideals. Urban African Americans have largely been disadvantaged by a system of values and institutions in which they strive to achieve prevailing ideals of social and economic stability while simultaneously being hindered by their socioeconomic circumstances (Amaro and Raj 2000; Whitehead 1997). This "structural violence"

may limit access to resources and opportunities, preventing many African Americans (along with other underprivileged groups) from realizing the stability they desire (Galtung 1969; Amaro and Raj 2000). Previous studies have suggested that adolescents may experience psychological distress resulting from an inability to achieve internalized gendered expectations (Pleck 1995; Kerrigan et al. 2007; Beauboeuf-Lafontant 2009).

This “gender role discrepancy strain” (Pleck 1995) may be further exacerbated by adolescents’ perceived necessity to relinquish social support in order to become a man or woman. The adolescents in our study relied on support from extended social networks in order to navigate instability in their lives. Indeed, these informal support networks have been identified as an important protective factor which may aid African Americans, in particular, in coping with stressful life circumstances (Barrow et al. 2007). A gender ideology that requires youth to forgo this important resource not only disregards the reality of their lives but could also put adolescents at heightened risk for poor health outcomes.

Despite life circumstances that would suggest otherwise, this study found little indication of “gender role discrepancy strain” among participants. Instead, adolescents portrayed social and economic stability as an attainable state and expressed confidence in their ability to realize these ideals. Participants almost universally positioned themselves as exceptional within their households and communities, using these entities as negative role models against which they defined their gendered ideals. This sentiment held true even among adolescents who had already become parents or been incarcerated. This narrative runs counter to the body of research which suggests that a more positive view of one’s ethnic group is associated with increased self-esteem and self-efficacy among African American adolescents, adding credence to studies that suggest there may be significant variability in this relationship (Sellers et al. 2006; Barrow et al. 2007).

Findings from this study should be viewed in light of a few important considerations. These results represent the experiences of participants as they chose to present them to interviewers who were outsiders from a different age group, racial/ethnic background and, in

some cases, sex. Additionally, the interpretation of the data was inevitably subject to the researchers' own background and biases that were informed by a set of life experiences that differed from those of the participants. Further, this study describes the experiences of only a small group of African American adolescents in Baltimore. It does not represent the diverse experiences of all African American adolescents in Baltimore. Rather, its aim is to build a framework that presents a more nuanced picture of the relationship between socioeconomic context and gender ideology.

Reduction of racial disparities in health outcomes, including HIV and other STIs, requires that researchers take a comprehensive approach to disease prevention that addresses the root causes of transmission. Understanding the social and economic context in which health behaviours are situated is crucial to creating effective public health interventions. This study contributes to our understanding of the relationship between socioeconomic context and gender ideology formation during a critical period in human development. It reaffirms the message of a growing body of literature that calls on researchers to reach beyond static indicators of poverty, education, and family structure towards a more comprehensive view of socioeconomic status which embodies individuals' lived experiences of instability (German and Latkin 2012b, 2012a; Hatch 2005; O'Leary 2001). It further encourages recognition of the diverse ways in which instability may influence adolescents' formation of gender ideology, suggesting that a targeted approach to health promotion that appreciates these nuances is essential for successful public health programming.

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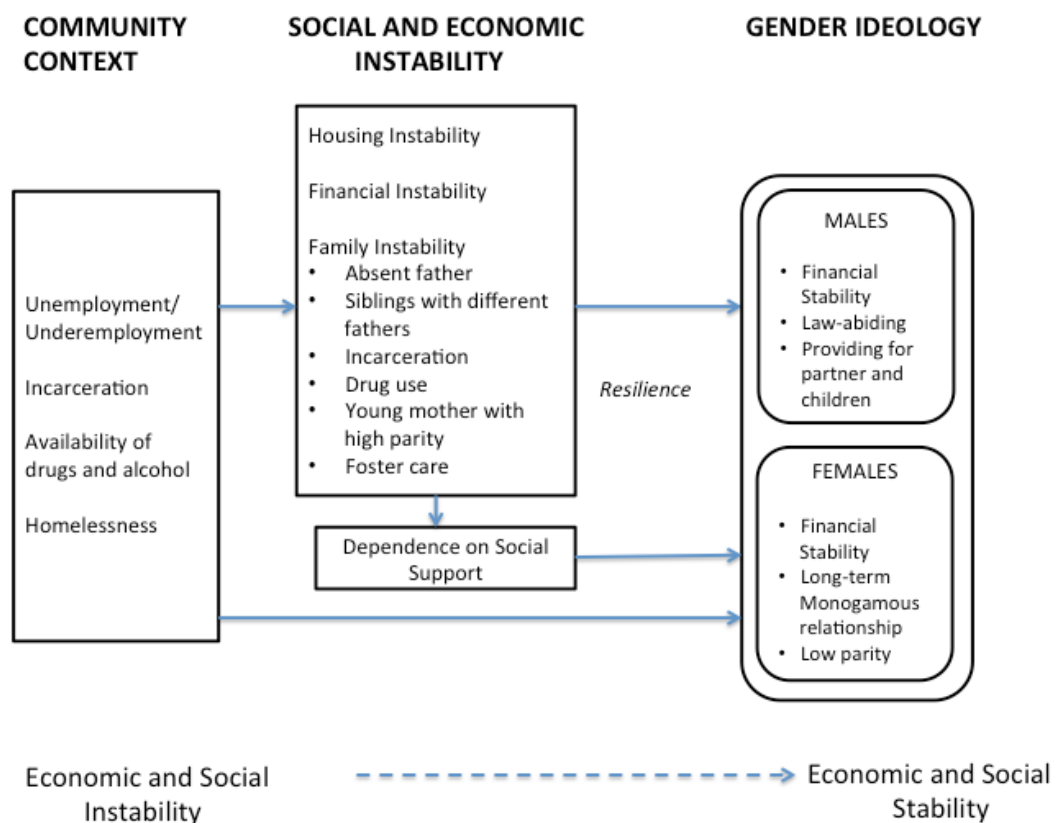
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**Figure 2.1. Conceptual Model for the Relationship between Socioeconomic Instability and Gender Ideology among Urban African American Adolescents**



### **CHAPTER 3: MANUSCRIPT TWO**

**Power in Heterosexual Relationships and Sexual Risk Behavior among Adolescents:**

**Differences between Whites and African Americans in Baltimore, MD**

## INTRODUCTION

Adolescents account for nearly half of new sexually transmitted infection (STI) cases in the United States each year, despite forming only one quarter of the sexually active population (Weinstock, Berman, and Cates Jr 2004). The burden of STIs is not distributed equally among them with African Americans at higher risk of contracting chlamydia, gonorrhea, primary and secondary syphilis, and HIV compared to their white counterparts. Young African American women, in particular, bear the heaviest burden of gonorrhea and chlamydia of all populations in the U.S. (CDC 2011a, 2011b). Although racial differences account for these substantial inequities in STI incidence, it is unlikely that their explanation is biological. Instead, research suggests that a combination of structural, social, and economic factors may drive observed disparities (Kerrigan et al. 2007; Whitehead 1997). Traditional gender ideologies, or the socially constructed norms, expectations and beliefs associated with being a male or female, may be linked to STI risk in heterosexual American adolescents (Kerrigan et al. 2008; O’Sullivan et al. 2006; Pleck, Sonenstein, and Ku 1993a; Santana et al. 2006; Schoeneberger, Logan, and Leukefeld 1999; Shearer et al. 2005). Gender role beliefs regarding power in heterosexual relationships are a key component of gender ideology that may have particularly important implications for sexual risk behavior.

In the theoretical and empirical literature, relationship power has been conceptualized as arising from several domains including emotional intimacy, decision-making, and economics (Waller 1937; Connell 1987; Emerson 1976). In the 1930s, Waller’s “Principle of Least Interest” posited that the partner who is least emotionally invested in a relationship is also most likely to hold control (Waller 1937). “Social Exchange Theory” (Emerson 1976) built on this principle by highlighting interpersonal expressions of power including dominance in decision-making and engaging in behaviors with which the other partner disagrees. Connell’s “Theory of Gender and Power” (1987) provides a more comprehensive framework for understanding heterosexual relationship power by delineating three key social structures that organize gendered relationships

between males and females: sexual division of labor (i.e. assignment of men and women to different types of work), sexual division of power (i.e. distribution of power between males and females), and the “structure of cathexis” (i.e. social norms surrounding intimacy and sexuality) (Wingood and DiClemente 2000).

Researchers have taken several different approaches to studying the linkages between gender ideology and sexual risk behavior. In one approach, gender is hypothesized to influence behavior by molding beliefs about what constitutes male or female personality traits without reference to the other gender. Pleck and colleagues’ Male Role Attitudes Scale, for example, consists of eight items measuring male ideals regarding status, toughness, and anti-femininity (e.g. “It is essential for a guy to get respect from others) (Pleck, Sonenstein, and Ku 1993a). Higher MRAS score, indicating endorsement of more traditional beliefs about masculinity, was found to be associated with unprotected sex among young men (Santana et al. 2006), greater number of sex partners and inconsistent condom use among older adolescent males (Pleck, Sonenstein, and Ku 1993b), and sexual initiation among younger adolescent males and females (Pleck and O'Donnell 2001).

Other approaches highlight attitudes towards power dynamics between males and females in their characterization of gender role beliefs. For example, O’Sullivan et al.’s (2006) “Traditional Sexual Roles” scale is a five item scale which captures acceptance of inequitable gender roles specifically related to sexual activity (e.g. “in new relationships, women should wait for men to initiate sex”). Adherence to more traditional beliefs, as captured by the “Traditional Sexual Roles Scale”, was associated with a higher number of sex partners in the past two months among male college students (O’Sullivan et al. 2006). Murnen and Byrne’s (1991) “Hyperfemininity Index” combines both sex-specific and relationship-oriented measurements of gender ideology. The 26-item scale measures females’ acceptance of stereotypical feminine gender roles in domains such as career-orientation, value placed on heterosexual relationships, and use of sexuality to maintain a romantic relationship. Higher scores on the “Hyperfemininity



Index”, indicating more traditional beliefs about femininity, have been associated with greater number of sex partners, increased likelihood of using drugs and alcohol during sex, increased frequency of sexual intercourse, and acceptance of aggressive sexual behavior among college women (Logan, Staton, and Leukefeld 2003; Schoeneberger, Logan, and Leukefeld 1999; McKelvie and Gold 1994) as well as sex partner concurrency among African American adolescent females (Kerrigan et al. 2008). Similarly, Pulerwitz et al.’s (2008) 24-item “Gender Equitable Men (GEM) Scale” has been utilized internationally to measure both sex-specific and relationship-oriented gender norms within heterosexual partnerships and has been associated with contraceptive use and intimate-partner violence in various developing country contexts (Pulerwitz et al. 2010).

While this growing body of evidence points to the connection between gender ideology and STI risk, a more detailed picture of how constructs measuring gender and their associations with sexual behavior might manifest differently within specific racial subgroups has yet to emerge. Existing literature is dominated by studies on middle-class White American males, largely neglecting females and minority populations (Whorley and Addis 2006). Among studies that do include these subgroups, analyses are often limited to one racial group or combine racial subgroups, masking the unique psychometric properties of the construct within subpopulations and obscuring potential differences in observed associations based on sociocultural context (Kerrigan et al. 2008; O’Sullivan et al. 2006; Santana et al. 2006; Schoeneberger, Logan, and Leukefeld 1999; Shearer et al. 2005; Whorley and Addis 2006).

Although the theoretical literature suggests that important differences in gender ideology do exist between Whites and African Americans, it is conflicted over the source and nature of these differences. Some scholars have argued that the historical legacy of slavery in the United States and the modern necessity for African American women to join the paid workforce have contributed to more equitable norms related to household division of labor and decision-making in African American families when compared to Whites (Kane 2000). However, others posit that

African American men have adopted an ideology of male dominance in relationships as a method of compensating for racial and socioeconomic disadvantage and that African American women may idealize the option of stay-at-home motherhood as a luxury associated with a privileged lifestyle (Kane 2000). Qualitative research suggests that, for urban African Americans, distinct pathways exist between gender ideology and STI risk in which limited economic opportunity has driven a redefinition of masculinity in the form of sexual risk behavior and drug trafficking (Bourgois 1996; Kerrigan et al. 2007; Tsui et al. 2008; Whitehead 1997).

Quantitative studies that have empirically tested these assertions report inconsistent findings. While some found no differences between Whites and African Americans, others reported that African Americans possess more egalitarian attitudes towards women in the paid workforce but have less equitable views within the realm of family and intimate partnerships (Kane 2000). Evidence is also uncertain as to how the relationship between gender role beliefs and sexual risk behavior differs by race. Pleck et al.'s (1993) Male Role Attitudes Scale, for example, yielded differing levels of internal consistency among Black and White participants but showed no significant difference by race in its association with risk behavior. Pirog-Good and colleagues, on the other hand, found an association between teenage fatherhood and traditional gender role beliefs among White but not African American males (Pirog-Good 1995).

Given the persistent racial disparities in STI transmission in the United States and the importance of gender ideology as a potential driver of STI risk, the question of how gender role beliefs and their subsequent relationship with sexual risk behavior differ between African Americans and Whites adolescents remains a pressing area of inquiry. This study fills a gap in the literature by independently assessing the psychometric properties of the Power and Attitudes in Relationships (PAIR) scale (Sherman, Gielen, and McDonnell 2000) among White and African American male and female adolescents in Baltimore, MD. It further tests the association between PAIR scale score and having a risky partnership within each of these subpopulations.

## **METHODS**

### ***Study Design, Sampling Strategy, Study Population, and Procedures***

Data for the current study were derived from the baseline questionnaire of a longitudinal study whose main objective was to explore the role of gender ideology in driving sexual behavior among adolescents. Below, we describe the household study design, sampling strategy, and procedures.

Data were collected from February, 2011 through May, 2013 among low and middle socioeconomic status (SES), sexually active, White and African American adolescents (N=352) living in Baltimore, MD. Participants were recruited from a citywide household sample based on 254,458 residential addresses from 699 of Baltimore's 710 census block groups (CBGs). Households were randomly selected from CBGs chosen to represent low (no college education) and middle (some college education or higher) SES neighborhoods with majority White or African American populations. CBGs with higher concentrations of Whites and college-educated African Americans were oversampled to help ensure a balanced distribution of survey participants with regards to race and SES.

All sampled households received a letter explaining the purpose of the study two weeks prior to being contacted by study staff. Research assistants contacted each household either by phone or in-person to determine if one or more 15-24 year olds lived within the home. One participant was enrolled in the study per household. To participate, respondents were required to meet the age requirement and report ever having had vaginal intercourse with a person of the opposite sex. In households with more than one eligible person, one adolescent was randomly selected for screening. The survey was administered by A-CASI (audio computer assisted self-interview) software in a private area in the participant's house. Following survey completion, participants received a \$25 pre-paid debit card for their time. For participants 18 years or older, written informed consent was obtained. For those under 18 years old, written informed assent was

obtained in addition to written informed consent from a parent/guardian. This study was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

### ***Survey Measures***

*Attitudes towards Power in Relationships* was measured using the PAIR (Power and Attitudes in Relationships) scale (Sherman, Gielen, and McDonnell 2000). PAIR was based on the theory of Gender and Power (Connell 1987) and was previously developed and validated in a sample of African American women (N=417) living in Baltimore City. The scale consists of eight self-reported items that represent four domains related to participants' beliefs regarding the balance of power in heterosexual relationships (i.e. perceived need to be in a relationship, division of household labor, sexual assertion, and decision-making). All items were measured on a four point Likert Scale from 1 (strongly agree) to 4 (strongly disagree) with lower scores reflecting traditional gender role beliefs that favor male dominance in relationships and higher scores indicating support for more gender-equitable relationships. In the previous validation study, the scale had good reliability (Cronbach's  $\alpha = .79$ ) and represented a single factor (Sherman, Gielen, and McDonnell 2000).

*Hyperfemininity* was measured using the Hyperfemininity index (HFI) (Murnen and Byrne 1991). The HFI comprises 26 self-reported items that represent broad domains related to feminine gender ideology including importance of intimate relationships with men, sexuality and physical appearance as a means to secure an intimate relationship, and support for traditional sexual behaviors and beliefs among men. Each item presents a binary response option with one choice representing the "hyperfeminine" belief and the alternative representing a more equitable belief. For example, the participant is asked to choose between two statements: "sometimes I care more about my boyfriend's feelings than my own" and "it is important to me that I am as satisfied with a relationship as my partner is". The scale was originally validated among 145 American female

undergraduate students (Murnen and Byrne) and was found to represent a single factor solution with good internal consistency reliability (Cronbach's  $\alpha=.76$ ). It was later validated as a single factor among 155 African American adolescent females in Baltimore, MD with a reliability coefficient of .70 after dropping 6 scale items (Kerrigan, 2008).

*Hypermasculinity* was measured using the Hypermasculinity index (HMI) (Mosher and Sirkin 1984). Originally 30 self-reported items, the scale was validated among undergraduate male university students (N=135) as a measure of exaggerated masculine personality characteristics including status, toughness, and anti-femininity. All items were scored on a four point Likert Scale from 1 (strongly agree) to 4 (strongly disagree) with lower scores reflecting more traditional beliefs about masculinity and higher scores reflecting less traditional beliefs. Examples of items include: "a man should never back down in the face of trouble" and "it bothers me when a man acts like a girl". We used a subset of 11 items, representing the domains of status and toughness, which were validated by Thompson and Pleck (1986).

*Validation through Sex and Sexual Relationships* was measured using the *Validation through Sex and Sexual Relationships Scale (VTSSR)*. The VTSSR consists of 12 self-reported items that measure individuals' perceived importance of being in a sexual relationship. Scale domains include evaluation of self-worth through sexual relationships (e.g. "I do not think positively about myself when I am not having sex regularly") and perceived social pressure to engage in sex (e.g. "my friends respect me more when I am in a sexual relationship"). Response options are on a Likert Scale from 1 (strongly agree) to 4 (strongly disagree) such that a lower score reflects a greater need for personal and social validation through sex. The scale was developed and validated in a sample of African American men and women in Baltimore, MD and was found to have good internal consistency among both males ( $\alpha=0.77$ ) and females ( $\alpha=0.87$ ) (Towe 2009).

*High-Risk Sex Partnership*, our outcome variable, was dichotomous and defined as: self-report of three or more sex partners in the past 90 days, having a sex partner who practiced concurrency in the past 6 months, exchanged sex in the past 6 months, or having had an HIV+ and/or IDU sex partner in the past 6 months (Jennings et al. 2012).

*Additional Demographic and Behavioral Variables* that were assessed include: race/ethnicity (African American; White), age (continuous), primary guardian's level of education (some college or more; high school diploma or less), age at first sex (years, continuous), years since first sex (continuous), ever been diagnosed with an STI other than HIV (yes; no), HIV+ (yes; no); sex partners in the past three months (0-1; 2+), condom use at last sex (yes; no), and type of most recent partnership (main; casual).

### ***Statistical Analyses***

The current analyses were limited to 272 participants who reported having one or more heterosexual relationship in the past six months. Preliminary statistical analyses included exploratory data analyses, calculation of statistical analysis weights to account for the study's complex sampling strategy, and calculation of weighted summary statistics. Weighted summary statistics included means and standard errors (SE) for continuous variables and proportions for categorical variables. All statistical analyses were conducted using STATA version 11 software (StataCorp 2009).

A PAIR score was constructed for each participant by summing item responses then dividing the total by the number of non-missing items. Item 3 was reverse-coded to reflect the direction of the other scale items. Means and standard errors were generated for each item for males and females separately and stratified by race. To account for the complex survey design, adjusted Pearson Wald F-statistics were used to assess differences in mean item scores by sex and race.

Since the PAIR Scale had only been validated in one previous study, and never among males or adolescents, we used exploratory factor analysis to confirm scale domains. Of 276 respondents, one male and one female were dropped due to missing answers for one or more of the scale items. All analyses were conducted for males and females separately then stratified by race. Principal-components analysis and a visual inspection of the scree plot were used to select the appropriate number of factors represented by the scale. Factor analysis was then performed using the maximum likelihood method with a Pearson's correlation matrix. Factor loadings and uniqueness were examined to determine whether there were free-standing items which should be dropped from the scale. Although there is no concrete cut-off for factor loadings in the social sciences, a loading of .32 or above has been cited as a good "rule of thumb" for retaining items in a factor (Costello and Osborne 2005). Thus, items loading at or above .32 were considered a good fit for the attitudes towards power in heterosexual relationships construct. When one or more items were deleted, EFA was conducted again to assess the fit of the respecified scale.

External construct validity of the PAIR scale was assessed by testing correlations between participants' PAIR scores and other theoretically relevant constructs. These included hyperfemininity (females only) (Murnen and Byrne 1991), hypermasculinity (males only) (Mosher and Sirkin 1984), and validation through sex and sexual relationships (males and females) (Towe 2009). Positive and significant correlations between these constructs were considered to represent good external construct validity. Internal consistency reliability analyses were conducted by calculating a Cronbach's alpha ( $\alpha$ ). A Cronbach's alpha  $\geq .6$  was considered acceptable based on its widespread acceptance as a minimum standard for reliability within the social sciences (Nunnally and Bernstein 1991).

The association between PAIR score and having a high-risk sex partnership was assessed using weighted simple and multivariate logistic regressions. Given the non-normal distribution of the measure in all four subgroups, PAIR scores were Z-transformed for the purposes of bivariate and multivariate analyses. Adjusted Pearson Wald F-statistics were used to assess bivariate

associations between PAIR score, demographics characteristics, and our outcome (high-risk sex partnership). Adjusted and unadjusted logistic regression analyses were then conducted to assess the association between PAIR and having a high-risk sex partnership. Adjusted analyses controlled for statistically and theoretically relevant confounders including age and guardian's education. All regression analyses were stratified by sex then by race. Adjusted odds ratios and 95% confidence intervals were used to assess significance in final models.

## **RESULTS**

### ***Sample***

Participants in this study were male (n=106) and female (n=166) adolescents aged fifteen to twenty-four (mean age of 21) (Table 3.1). Sixty-six percent were African American and 34% were White. Approximately 49% reported that their primary guardian had achieved a level of formal education greater than high school. The average age at first sex was significantly lower ( $p<.01$ ) among males (14.6) than females (15.7). Significantly more ( $p<.01$ ) male respondents (47%) than female respondents (19%) reported two or more sex partners in the past three months. Half (51%) of male respondents reported that their most recent sex partner was a "main partner" compared to 88% of females ( $p<.01$ ). Sixty-two percent of males and 50% of females reported using a condom at last sex. Forty-five percent of males and 35% of females had engaged in a high-risk sex partnership in the past six months and 9% of both males and females had ever been diagnosed with an STI.

### ***Scale Characteristics and Racial Differences***

Item scores on the PAIR scale ranged from 1 (support for norms which favor male dominance in heterosexual relationships) to 4 (support for an equitable balance of power in heterosexual relationships). On average, female adolescents reported significantly more ( $p<.01$ ) gender equitable beliefs about power in heterosexual relationships (mean PAIR=3.39) than male



adolescents (mean PAIR=2.96) and, among both males and females, White adolescents reported more equitable beliefs than African American adolescents (Table 3.2). The overall mean PAIR score among African American females (3.32, SE=.05) was significantly lower ( $p=.017$ ) than White females (3.50, SE=.05). The overall mean PAIR score among African American males (2.88, SE=.10) was also lower than White males (3.15, SE=.14) but not significantly so ( $p=.112$ ).

On seven of eight PAIR items, African American males reported greater agreement than White males. This difference was statistically significant ( $p=.019$ ) for item 7 (“Women don't need to have sex as much as men do”) and approaching significance ( $p=.073$ ) on item 6 (“If a man and a woman are arguing, it is important for her to “give in” so they will stop arguing”). Similarly, African American females agreed more strongly than White females with seven of the PAIR items. Statistically significant differences ( $p<.05$ ) were found on items 3 (“A woman should confront her partner if she finds out he is having an affair”), 4 (“Men's opinions are more important than women's in making important decisions in a relationship”), 5 (“A man's happiness is more important than a woman's in a relationship”), and 7 (“Women don't need to have sex as much as men do”). Both White and African American adolescent males most strongly agreed with item 2 (“A woman needs to have a man in her life”). Whereas, White and African American females most strongly agreed with item 7 (“Women don't need to have sex as much as men do”).

### ***Structure of PAIR Scale***

Principle components analysis and a visual inspection of the scree plot yielded a single factor solution for both male and female adolescents. The single factor structure remained for all four subgroups when data were stratified by race. Exploratory factor analysis was run, restricting the distribution to one factor (Table 3.3). Among both male and female adolescents, item 3 (“A woman should confront her partner if she finds out he is having an affair”) was dropped from the analysis based on its low factor loading of .157 and -0.030, respectively, which is less than the cutoff of .32 employed here. When analyses were stratified by race, item 3 was dropped among

all subgroups with the exception of White adolescent males. Among African American females, in particular, items 2 (“A woman needs to have a man in her life.”) and 7 (“Women don't need to have sex as much as men do.”) were also found to be problematic and were dropped from the final respecified scale. Final factor analyses of respecified scales included items 1-2 and 4-8 among all males and females. However, this structure differed by racial subgroup with White males retaining all the original items and African American females retaining only 5 of 8 items (1,4-6,8).

### ***Reliability Analyses***

Cronbach’s internal consistency coefficient  $\alpha$  for the entire 8-item scale was .82 for all males and 0.65 for all females (Table 3.3). After stratifying by race, the  $\alpha$  was lower among African American males ( $\alpha=.82$ ) than White males ( $\alpha=0.85$ ) and lower among African American ( $\alpha=0.64$ ) than White females ( $\alpha=.68$ ). After dropping low loading items, the respecified scales yielded higher Cronbach’s alphas among all males ( $\alpha=0.85$ ) and all females ( $\alpha=0.68$ ). By subgroup, coefficients ranged from .68 in White females to .85 in White males. The scale surpassed the minimum standard of reliability ( $\alpha > .6$ ) among all subgroups.

### ***External Construct Validity***

For each female respondent, an average HFI score was created by summing responses to each item on the HFI (0=hyperfeminine response; 1=gender-equitable response) then dividing the total by the number of questions answered. Sixteen HFI items were coded in reverse to reflect the directionality of the other scale items. Among all females, the HFI scale was positively and significantly correlated with the PAIR scale ( $r=0.18, p<.05$ ) (Table 3.4). After stratifying by race, the scales were positively correlated in both groups but not significantly so (African American females ( $r=0.12$ ), White females ( $r=0.13$ )).

For male respondents, scores (1-4) for each item on the HMI were summed then divided by the total number of questions answered. The HMI and PAIR scales were positively and significantly correlated among all male adolescents ( $r = .59, p < .01$ ) and, after stratifying by race, among both African American ( $r = .60, p < .01$ ) and White ( $r = .51, p < .01$ ) males.

Average VTSSR scores for both male and female respondents were generated by summing together individuals' scores (1-4) on each item then dividing by the total number of questions answered. The VTSSR and PAIR scales were positively correlated among all male ( $r = 0.35, p < .01$ ) and female ( $r = .27, p < .01$ ) adolescents. After stratifying by race/ethnicity, the scales were significantly, positively correlated among all subgroups with the exception of White females ( $r = 0.15$ ).

### ***Associations with High-Risk Sex Partnership***

Among male adolescents, engaging in a high-risk sex partnership in the past six months was inversely associated with PAIR scale score such that young men who supported more equitable relationship norms were less likely to engage in risky sexual behavior (Unadjusted OR, 0.57,  $p = 0.042$ ) (Table 3.5). This relationship was even stronger (Adjusted OR, 0.55,  $p = 0.026$ ) after adjusting for participant's age and guardian's education level. After stratifying by race, similar trends were seen among both White and African American male adolescents however, the association only approached statistical significance among Whites (AOR, 0.47,  $p = 0.096$ ).

No significant relationship was found between PAIR score and engaging in a high-risk sex partnership among all female adolescents before or after adjusting for potential confounders (AOR, 1.01,  $p = 0.951$ ). However, dividing the sample by race revealed significant associations in opposing directions for African American and White females. White females who supported a more equitable balance of relationship power were less likely to engage in risky sexual behavior after adjusting for age and guardian's education level (AOR, 0.28,  $p = 0.005$ ). On the other hand,

African American females who reported more equitable gender role beliefs were more likely to engage in a high-risk sex partnership (AOR, 2.04,  $p=.004$ ).

## **DISCUSSION**

This study sought to validate the Power and Attitudes in Relationships (PAIR) scale and assess its association with sexual risk behavior within four distinct adolescent populations: African American males, White males, African American females, and White females. Our findings indicate that PAIR is a valid and reliable measure of relationship-oriented gender role beliefs within all four of these subgroups. However, the factor structure and psychometric properties of the scale varied by sex and race. Additionally, lower PAIR scores, indicating more traditional beliefs about heterosexual relationship power, were associated with having a high-risk sexual partnership among only two sub-samples (all males and White females). The opposite relationship was found in African American females.

Although the PAIR scale was initially developed and validated within a sample of urban African American women (Sherman, Gielen, and McDonnell 2000), we found that the construct was transferable to African American and White adolescents of both sexes, demonstrating good internal consistency and external construct validity in all four subgroups. In each group, at least five of the eight initial PAIR items were highly correlated with each other, reflecting important similarities across groups in their conceptualization of heterosexual relationship power. Additionally, PAIR was positively correlated with the HFI (African American and White females), HMI (African American and White males), and VTSSR (all groups) lending credence to its validity as a measure of relationship-oriented gender role beliefs and verifying its theoretical linkages to sex-specific gender role beliefs.

However, there also existed notable differences between subgroups in their understanding of heterosexual relationship power. The final structure of the PAIR scale most closely resembled the original scale among White male adolescents who retained all eight of the original PAIR

items. The most items were dropped among African American female adolescents who retained only five of the original eight items. This finding was surprising given that the scale was initially developed and validated among African American female adults (Sherman, Gielen, and McDonnell 2000) and may indicate substantial variation in gender role beliefs by age. The internal consistency reliability of PAIR also differed by racial subgroup, a finding that has been echoed in previous studies on gender ideology in diverse populations (e.g. Pleck et al. 1993). The original scale was most reliable among White males and least reliable among African American females. However, after respecification, White females had the lowest reliability coefficient suggesting that, in this subgroup, important domains of relationship power remain unaccounted for by the PAIR scale. PAIR's failure to correlate with the VTSSR among White females also differentiated this group of adolescents from the others, highlighting the need for a more nuanced understanding of gender ideology in this population (Whorley and Addis 2006).

Notably, item 3 ("A woman should confront her partner if she finds out he is having an affair") did not load with the other scale items among three of the four subgroups (African American males, African American females, or White females). The content of this item captures both beliefs about concurrency and norms regarding relationship conflict. However, convergence of item 6, which is also conflict-related ("If a man and a woman are arguing, it is important for her to 'give in' so they will stop arguing"), with the other scale items suggests that concurrency, in particular, may not resonate with some adolescents as a central component of relationship power. Indeed, on average, adolescents from all four subgroups expressed very strong agreement with item 3, indicating that concurrency is deemed almost universally unacceptable despite adolescents' more traditional beliefs in other dimensions of relationships. This finding contradicts previous qualitative work among urban adults that identifies acceptance or rejection of concurrency as a key element of relationship power (Gorbach et al. 2002; Nunn et al. 2012; Senn et al. 2011), suggesting that further research is needed to better understand the context and nature of concurrent sexual partnerships in adolescent populations.

On average, the adolescents in this study supported a more equitable balance of power in heterosexual relationships, largely expressing disagreement with scale items in favor of male dominance. However, by total score and within items, African Americans of both sexes reported more traditional gender role beliefs than Whites. This finding contradicts a broader body of theoretical literature on race and gender which argues that the historical context of race in the United States has shaped interest structures among African Americans that favor a greater commitment to egalitarianism within relationships and in general (Bolzendahl and Myers 2004; Kane 2000). Instead, it may provide support for the hypotheses of qualitative researchers who posit that urban African Americans have adopted more traditional gender role beliefs as a way of compensating for socioeconomic disadvantage (Whitehead 1997). The only substantial exception to this trend was found among females: Whites were slightly more likely than African Americans to agree with the item “A woman needs to have a man in her life”. Greater disagreement with this statement among African American females may reflect the socialization process associated with disproportionately high rates of single mothers among urban African American youth (The Annie E. Casey Foundation 2013), providing further support for studies that have identified self-reliance as a central component of gender ideology among African American females (Romero 2000).

This study produced conflicting results regarding the relationship between beliefs about heterosexual relationship power and sexual risk behavior among adolescents. While the trend associations among males echo a larger body of research which points to an association between traditional gender ideology and sexual risk behavior among adolescent males (O’Sullivan et al. 2006; Pleck and O’Donnell 2001; Pleck, Sonenstein, and Ku 1993a; Santana et al. 2006), a more complex picture emerged among adolescent females. Traditional gender role beliefs among White females were significantly associated with having a high-risk sex partnership. However, among African American females, the reverse was true. This finding contributes to the conflicting research on gender ideology and sexual risk behavior among adolescent females which has found

that both equitable and inequitable beliefs can drive STI risk (Leech 2010). It further suggests that race may play an important role in determining the direction of this relationship.

Taken together, these results point to important differences between African American and White male and female adolescents in the conceptualization of gender roles and its subsequent relationship to STI risk, providing further weight to the message of scholars who have cautioned against assuming a single, equally valid standard for measurement of gender role beliefs across subgroups (Brannon and David 1976; Pleck, Sonenstein, and Ku 1993a; Thompson, Pleck, and Ferrera 1992). These findings suggest that the common practice of combining racial groups in studies of gender and STI risk may, in fact, conceal differences in the construction of gender and its relationship to sexual risk behavior between White and African American adolescents which have important implications for STI prevention.

This study has several limitations that warrant consideration. First, these data were collected via self-report and, although measures were taken to limit the influence of social desirability bias (i.e. use of ACASI for survey administration), over and underreporting of sexual behavior may still exist. Second, due to the nature of cross-sectional data, it is impossible to specify the causal direction of observed relationships. Specifically, gender role beliefs may be both a cause and consequence of engaging in sexual risk behaviors. Third, although the generalizability of these results has been enhanced by the study design (i.e. household-based random sample), gender is a context-specific construct and, thus, findings from this study may not be generalizable beyond African American and White urban adolescent populations.

The reduction of racial disparities in STIs requires that researchers and public health practitioners take a comprehensive approach to disease prevention that addresses the root causes of transmission. Gender role beliefs appear to be a salient predictor of STI risk among adolescents but the nature of these beliefs and their relationship to risk behavior may differ by racial group. Implementing targeted interventions that acknowledge these nuances is an important step towards reducing STI risk in this vulnerable population.

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**Table 3.1. Characteristics of Adolescent Respondents (N=272) in Heterosexual Relationships by Sex**

	<b>Total</b>	<b>Males</b>	<b>Females</b>	
<b>Characteristics</b>	(n=272) (%)	(n=106) (%)	(n=166) (%)	p
<b>Age</b> (mean, SE)	20.8 (.22)	20.2 (.35)	21.4 (.22)	0.005**
<b>Race</b>				
African American	66.2	70.0	62.2	0.288
White	33.8	30.0	37.8	
<b>Guardian's Education</b>				
High school Diploma or less	50.6	48.0	53.3	0.400
Some College or more	49.4	52.0	46.7	
<b>Partners in Past 3 Months</b>				
0-1	66.7	52.7	81.4	0.000**
2+	33.3	47.3	18.6	
<b>Age at First Sex</b> (mean, SD)	15.15 (.19)	14.6 (.31)	15.7 (.21)	0.006**
<b>Years since First Sex</b> (mean, SD)	5.71 (.25)	5.62 (.43)	5.79 (.27)	0.745
<b>Partner Type (Most Recent)</b>				
Casual	30.6	49.1	11.8	0.000**
Main	69.4	50.9	88.2	
<b>Condom Use at Last Sex, yes</b>	55.8	62.1	49.5	0.133
<b>History of STI (non-HIV), yes</b>	9.5	9.2	9.6	0.933
<b>HIV Positive, yes</b>	0.1	0.0	0.2	0.320
<b>High-Risk Partnership, yes</b>	40.5	45.3	35.4	0.227
<b>Average PAIR Score</b> (mean, SD)	3.17 (.05)	2.96 (.08)	3.39 (.04)	0.000**

\*\*p&lt;.01

**Table 3.2. Mean Scores and Standard Errors of PAIR items Stratified by Sex and Race**

<b>Panel 1: MALES</b>			
<b>Item</b>	<b>African Americans (n=60) mean (SE)</b>	<b>Whites (n= 46) mean (SE)</b>	<b>p</b>
1. A woman and not her "man " should do the cooking and house cleaning.	2.62 (.18)	2.91 (.18)	0.247
2. A woman needs to have a man in her life.	2.39 (.17)	2.59 (.17)	0.406
3. A woman should confront her partner if she finds out he is having an affair. (reverse-scored)	3.56 (.13)	3.59 (.16)	0.868
4. Men's opinions are more important than women's in making important decisions in a relationship.	3.22 (.13)	3.19 (.18)	0.890
5. A man's happiness is more important than a woman's in a relationship.	3.33 (.12)	3.59 (.13)	0.156
6. If a man and a woman are arguing, it is important for her to "give in" so they will stop arguing.	2.90 (.15)	3.32 (.17)	0.073
7. Women don't need to have sex as much as men do.	2.64 (.14)	3.15 (.16)	0.019*
8. If a man wants to have sex and a woman doesn't, she should have sex to please him.	3.06 (.13)	3.31 (.19)	0.281
<b>PANEL 2: FEMALES</b>			
<b>Item</b>	<b>African Americans (n=104) mean (SE)</b>	<b>Whites (n= 62) mean (SE)</b>	<b>p</b>
1. A woman and not her "man " should do the cooking and house cleaning.	2.87 (.11)	3.18 (.12)	0.062
2. A woman needs to have a man in her life.	3.24 (.10)	3.08 (.15)	0.371
3. A woman should confront her partner if she finds out he is having an affair. (reverse-scored)	3.61 (.14)	3.96 (.03)	0.013*
4. Men's opinions are more important than women's in making important decisions in a relationship.	3.55 (.11)	3.84 (.05)	0.021*
5. A man's happiness is more important than a woman's in a relationship.	3.74 (.08)	3.92 (.04)	0.033*
6. If a man and a woman are arguing, it is important for her to "give in" so they will stop arguing.	3.54 (.09)	3.65 (.12)	0.481
7. Women don't need to have sex as much as men do.	2.59 (.12)	3.07 (.15)	0.017*
8. If a man wants to have sex and a woman doesn't, she should have sex to please him.	3.73 (.06)	3.76 (.07)	0.721

\*p&lt;.05

Table 3.3. Factor Loadings from Original and Respecified PAIR Scales by Sex and Race

Factor Loadings						
Panel 1: MALES						
PAIR Scale Item	Total (n=106)		African Americans (n=60)		Whites (n=46)	
	Original Scale	Respecified Scale	Original Scale	Respecified Scale	Original Scale	Respecified Scale
1. A woman and not her "man " should do the cooking and house cleaning.	.683	.686	0.663	0.658	0.697	--
2. A woman needs to have a man in her life.	.511	.518	0.464	0.456	0.547	--
3. A woman should confront her partner if she finds out he is having an affair.	.157	--	-0.104	--	0.523	--
4. Men's opinions are more important than women's in making important decisions in a relationship.	.775	.774	0.786	0.788	0.814	--
5. A man's happiness is more important than a woman's in a relationship.	.746	.746	0.793	0.797	0.650	--
6. If a man and a woman are arguing, it is important for her to "give in" so they will stop arguing.	.714	.709	0.636	0.639	0.793	--
7. Women don't need to have sex as much as men do.	.483	.486	0.459	0.458	0.443	--
8. If a man wants to have sex and a woman doesn't, she should have sex to please him.	.799	.799	0.788	0.786	0.781	--
Alpha	.82	.85	.82	.84	.85	--

Factor Loadings						
Panel 2: FEMALES						
PAIR Scale Item	Total (n=166)		African American (n=104)		White (n=62)	
	Original Scale	Respecified Scale	Original Scale	Respecified Scale	Original Scale	Respecified Scale
1. A woman and not her "man " should do the cooking and house cleaning.	0.365	0.369	0.347	0.315	0.402	0.402
2. A woman needs to have a man in her life.	0.250	0.254	0.277	--	0.450	0.456
3. A woman should confront her partner if she finds out he is having an affair.	-0.030	--	-0.002	--	-0.151	--
4. Men's opinions are more important than women's in making important decisions in a relationship.	0.723	0.722	0.685	0.731	0.878	0.886
5. A man's happiness is more important than a woman's in a relationship.	0.748	0.748	0.750	0.753	0.609	0.608
6. If a man and a woman are arguing, it is important for her to "give in" so they will stop arguing.	0.652	0.654	0.707	0.693	0.531	0.531
7. Women don't need to have sex as much as men do.	0.329	0.334	0.295	--	0.342	0.340
8. If a man wants to have sex and a woman doesn't, she should have sex to please him.	0.451	0.453	0.495	0.452	0.317	0.315
<b>Alpha</b>	.65	.68	.64	.71	.68	.68



**Table 3.4. Pearson's correlations of the Power and Attitudes in Relationships (PAIR) scale, Hypermasculinity Index (HMI), Hyperfemininity Index (HFI), and Validation Through Sex and Sexual Relationships (VTSSR) Scale by Sex and Race**

<b>PAIR Scale</b>	<b>n</b>	<b>HMI</b>	<b>HFI</b>	<b>VTSSR Scale</b>
<b>Males</b>	106	0.59**	--	0.35**
African American Males	60	0.60**	--	0.34*
White Males	46	0.51**	--	0.50**
<b>Females</b>	166	--	0.18*	0.27**
African American Females	104	--	0.12	0.36**
White Females	62	--	0.13	0.15

\*p<.05 \*\*p<.01

**Table 3.5. Bivariate and Multivariate Analyses: Associations between Standardized PAIR Score and High-Risk Sex Partnership among Adolescents in Baltimore, City**

Participant Characteristics	n	Unadjusted OR	p	Adjusted OR <sup>a</sup>	p
<b>Males</b>	98	0.57 (.33,.98)	0.042*	0.55 (.33, .93)	0.026*
African American Males	55	0.65 (.33, 1.29)	0.216	0.63 (.33, 1.19)	0.151
White Males	43	0.48 (.22, 1.07)	0.071	0.47 (.19, 1.14)	0.096
<b>Females</b>	160	0.98 (.65, 1.49)	0.957	1.01 (.66, 1.55)	0.951
African American Females	61	1.86 (.95,3.65)	0.071	2.04 (1.03, 4.04)	0.041*
White Females	99	0.32 (.14, .71)	0.005*	0.28 (.12,.69)	0.005*

<sup>a</sup>Adjusted for participant's age and guardian's education

\*p<.05

## **CHAPTER 4: MANUSCRIPT THREE**

### **Attitudes towards Power in Relationships and Concurrency within Heterosexual Adolescent Partnerships in Baltimore, MD**

## INTRODUCTION

American adolescents are disproportionately affected by sexually transmitted infections (STIs). They account for nearly half of new cases each year, despite forming only one quarter of the sexually active U.S. population (Weinstock, Berman, and Cates Jr 2004). African American adolescents, in particular, bear the heaviest burden. They are more likely to contract chlamydia, gonorrhea, primary and secondary syphilis, and HIV than their white counterparts (CDC 2011a, 2011b). The adverse health consequences associated with these STIs are severe: infertility, pre-term birth, pelvic inflammatory disease, increased risk for contracting HIV, and death (Kaestle et al. 2005; Land and Evers 2002; Moodley and Sturm 2000).

Evidence suggests that concurrent sexual relationships, defined as two or more sexual partnerships that overlap in time, may increase the rate of spread of STIs within a sexual network and an individual's own risk of acquiring an STI, even after controlling for number of sex partners (Potterat et al. 1999; Rosenberg et al. 1999; Morris and Kretzschmar 1997, 1995; Gorbach, Drumright, and Holmes 2005). A 2006 case-control study found that heterosexual adults with a non-monogamous sex partner were 2.9 times more likely to be infected with HIV than those who did not report sex partner concurrency (Adimora et al. 2006). Similarly, a 2004 study of young adult heterosexual partnerships found that participants with a non-monogamous partner were 3.6 times more likely to have a current STI than participants with a monogamous sex partner (Drumright, Gorbach, and Holmes 2004). Patterns of concurrency have population-level implications as well. In a simulation study of sexual networks, Morris and Kretzschmar (1997) illustrated the exponential effects of concurrency on the growth rate of an HIV epidemic. By transforming only 25% of sequential monogamous partnerships into concurrent partnerships, the epidemic was three times as large after a five-year period (Morris and Kretzschmar 1997).

Beliefs about gender roles, or the socially constructed norms and expectations associated with being a male or a female, have been associated with sexual risk behaviors in heterosexual American adolescents (Kerrigan et al. 2008; O'Sullivan et al. 2006; Pleck, Sonenstein, and Ku

1993; Santana et al. 2006; Schoeneberger, Logan, and Leukefeld 1999; Shearer et al. 2005) and may be an important motivator of sexual relationship concurrency. Qualitative studies suggest that individual and relationship-oriented gender role beliefs may drive young urban men towards concurrent sexual relationships while simultaneously compelling female partners to accept their behavior. Virility and toughness among males (Carey et al. 2010; Kerrigan et al. 2007; Senn et al. 2011) and emotional strength, commitment, and care-taking among females (Kerrigan et al. 2007; Towner, Dolcini, and Harper 2012) have been identified in the literature as “ideal” sex-specific qualities which may facilitate concurrency. Within heterosexual partnerships, attitudes regarding male dominance in romantic relationships, need for emotional intimacy, and power over decision-making may also be of consequence (Nunn et al. 2012; Nunn et al. 2011; Senn et al. 2011).

Gender role beliefs are not formed within a vacuum. They are the dynamic product of a constant interaction between social, economic, and structural forces. Research suggests that important differences in gender-related beliefs and their relationship to sexual risk behavior exist based on racial group membership and socioeconomic status (SES). The majority of this literature is based among low-income African Americans (Kerrigan et al. 2007; Secor-Turner et al. 2011; Tsui et al. 2008; Whitehead 1997) and highlights the distinct pathways between gender and STI risk that emerge from the intersection between race and socioeconomic status. The ethnographic research of Tony Whitehead (1997), for example, describes how limited economic opportunity for low-income urban African American males has driven a redefinition of masculinity in the form of sexual risk behavior (e.g. concurrency and inconsistent condom use) and drug trafficking (Whitehead 1997). In Nunn et al.’s (2012; 2011) work with low-income urban African American females, sexual relationship concurrency was identified as a practical means for women to gain material support from male partners in times of economic vulnerability.

Despite the potentially important role of gender role beliefs in predicting sexual relationship concurrency, only one known study has quantitatively tested this association. In a clinic-based sample of African American female adolescents, participants who adhered to

traditional beliefs regarding femininity were significantly more likely (OR=2.8; 95% CI: 1.01-4.3) to report that their male sex partners had concurrent female sexual partners (Kerrigan et al. 2008). No study, to our knowledge, has assessed this relationship among males or White adolescents.

The goals of the current manuscript were to (1) examine whether concurrency within heterosexual partnerships was associated with participants' attitudes towards relationship power in a sample of urban male and female adolescents and (2) assess whether this relationship varied by race, SES, and/or type of partnership. Based on the theoretical and empirical literature, we hypothesized that more equitable gender role beliefs would be associated with decreased odds of index partner concurrency (participant's own concurrency) among male respondents and sex partner concurrency (participant's partner's concurrency) among female respondents. We further hypothesized that these associations would differ significantly in African American versus White adolescents, low versus middle SES adolescents, and casual versus main partnerships.

## **METHODS**

### ***Study Design, Sampling Strategy, Study Population, and Procedures***

Data for the current study were derived from the baseline questionnaire of a longitudinal study whose main objective was to explore the effect of gender role beliefs on sexual behavior among adolescents. Below, we describe the household study design, sampling strategy, and procedures.

Data were collected from February, 2011 through May, 2013 among low and middle socioeconomic status (SES), sexually active, White and African American adolescents (N=352) living in Baltimore, MD. Participants were recruited from a citywide household sample based on 254,458 residential addresses from 699 of Baltimore's 710 census block groups (CBGs). Households were randomly selected from CBGs chosen to represent low (no college education) and middle (some college education or higher) SES neighborhoods with majority White or African American populations. CBGs with higher concentrations of Whites and college-educated

African Americans were oversampled to help ensure a balanced distribution of survey participants with regards to race and SES.

All sampled households received a letter explaining the purpose of the study two weeks prior to being contacted by study staff. Research assistants contacted each household either by phone or in-person to determine if one or more 15-24 year olds lived in the home. One participant was enrolled in the study per household. To participate, respondents were required to meet the age requirement and report ever having had vaginal intercourse with a person of the opposite sex. In households with more than one eligible person, one adolescent was randomly selected for screening. The survey was administered by A-CASI (audio computer assisted self-interview) software in a private area in the participant's house. Following survey completion, participants received a \$25 pre-paid debit card for their time. For participants 18 years or older, written informed consent was obtained. For those under 18 years old, written informed assent was obtained in addition to written informed consent from a parent/guardian. This study was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

### ***Survey Measures***

#### ***Partner/ Relationship-Level Variables***

*Outcome Variables:* Two outcome variables were considered for this study: index partner concurrency (for males) and sex partner concurrency (for females). We used different outcomes for males versus females based on findings from the theoretical and empirical literature that connect more traditional gender role beliefs to index partner concurrency among males and sex partner concurrency among females. For males, index partner concurrency was dichotomous (yes=1; no=0) and defined as self-report of having one or more sexual partnership(s) that overlapped in time with the reported sexual relationship. We assessed index partner concurrency by asking, for each partnership, "Did you have sex (meaning ONLY anal or vaginal sex) with anyone else while you were seeing [partner's name]?". For females, sex partner concurrency was

dichotomous (yes=1; no=0) and defined as the self-report of a partner having one or more sexual partnership(s) that overlapped in time with the reported sexual relationship. We assessed sex partner concurrency by asking, for each partnership, “Did [partner’s name] have sex (meaning ONLY anal or vaginal sex) with anyone else at any point while you were seeing him?”.

*Relationship/Partner Characteristics:* Relationship characteristics considered for this study included type of partnership, condom use at last sex, and age difference between partners. Partner characteristics included participant’s report of partner’s race, STI history, and incarceration history. Type of partnership was dichotomous (main; casual) and was assessed by asking “Do you consider [partner’s name] a main or casual partner?”. Main partner was defined as “someone you have sex with and you consider to be the person you are serious about”. Casual partner was defined as “someone you’ve had sex with only once or a few times or you have sex with on an ongoing casual basis. The important thing is that this person is not a main partner to you.” Condom use at last sex was measured with the question “the last time that you had vaginal/anal sex with [partner’s name], did you use a condom?” and dichotomized (yes; no). Age difference between partners was generated by subtracting the female partner’s age in years from the male partner’s age in years then dichotomizing the variable ( $\geq 2$  years;  $< 2$  years). Partner history of STI was dichotomous (yes; no) and was assessed by asking, “Has [partner’s name] ever been diagnosed with an STD?” Partner’s HIV status was assessed by asking, “Has [partner’s name] ever been HIV infected?” Partner’s incarceration history was measured by asking, “Has [partner’s name] ever been incarcerated?” Partner’s race was categorized as African American, White, or other.

### ***Individual Level Variables***

*Primary Exposure Variable:* The primary independent variable considered was attitudes towards power in relationships. This construct was measured using the PAIR (Power and Attitudes in



Relationships) scale (Sherman, Gielen, and McDonnell 2000). PAIR was based on the theory of Gender and Power (Connell 1987) and was originally developed and validated in a sample of African American women (N=417) living in Baltimore City. The scale consists of 8 self-reported items that represent four domains related to participants' beliefs regarding the balance of power in heterosexual relationships (i.e. perceived need to be in a relationship, division of household labor, sexual assertion, and decision-making). All items were measured on a four point Likert Scale from 1 (strongly agree) to 4 (strongly disagree) with lower scores reflecting traditional gender role beliefs that favor male dominance in relationships and higher scores indicating support for more gender-equitable relationships. In the original validation study, the scale had good reliability (Cronbach's  $\alpha = 0.79$ ) and represented a single factor (Sherman, Gielen, and McDonnell 2000).

In our study, the PAIR scale had an initial internal consistency reliability coefficient (Cronbach's  $\alpha$ ) of 0.65 among all females and 0.82 among all males. After deleting one item from both the males and female PAIR scales due to low factor loadings ( $<.32$ ), reliability increased to 0.68 among females and 0.85 among males, levels which were considered acceptable based on the widespread acceptance of  $\alpha \geq .6$  as a minimum standard for reliability within the social sciences (Nunnally and Bernstein 1991).

*Demographic and Behavioral Variables:* Self-reported demographic and behavioral characteristics included: sex (male; female), race/ethnicity (African American; White), age (continuous), age at first sex (years, continuous), years since first sex (continuous), ever been diagnosed with an STI other than HIV (yes; no), HIV+ (yes; no), ever been incarcerated (yes; no), and number of sex partners in the past three months (0-1; 2+). Participants' socioeconomic status (SES) was categorized as low or middle based on the participant's primary childhood guardian's level of education (low=high school diploma or less; middle= some college or more).

### ***Statistical Analyses***

The current analyses were limited to male and female participants who reported having one or more heterosexual relationship in the past six months. For these analyses, we constructed “individual” and “partnership-level” datasets. The “individual dataset” contained data on individual-level demographics (e.g. participant’s age) and risk behavior (e.g. participant’s age at first sex) for each participant. The “partnership dataset” contained data on all sexual partnerships reported for each participant in the past six months in addition to the individual-level data. Each participant could contribute data on up to seven partnerships. Male-reported partnerships missing data on index partner concurrency (n=12), female-reported partnerships missing data on sex partner concurrency (n=19), and individuals with one or more missing PAIR scale items (n=1 male) were excluded from regression analyses.

Preliminary statistical analyses included PAIR scale validation, exploratory data analyses, calculation of statistical analysis weights to account for the study’s complex sampling strategy and clustering of partnerships at the individual level, and calculation of weighted summary statistics at the individual and partnership levels. The psychometric properties of the PAIR scale were assessed separately for males and females using principle components analysis, exploratory factor analysis, and reliability analysis. Further details on the validation process are described in Manuscript Two. Weighted summary statistics included means and standard errors (SEs) for continuous variables and proportions for categorical variables. Significant differences between males and females were assessed using adjusted Pearson Wald F-statistics to account for the complex survey design. Continuous variables were examined for normalcy. Given the skewed distribution of PAIR scale scores among both males and females, the measure was Z-transformed for the purposes of bivariate and multivariate analyses. Kappa statistics were generated to assess racial concordance within partnerships. All statistical analyses were conducted using STATA version 11.0 software (StataCorp 2009).

Using sexual partnerships as the unit of analysis (N=462), we conducted weighted bivariate and multivariate analyses with robust standard errors. Bivariate analyses using Pearson Wald F-statistics and simple logistic regressions were conducted to explore associations between PAIR score, demographics, behavioral variables, partner and relationship characteristics, and concurrency within a partnership. Multivariate logistic regression was then used to determine the association between an individual's PAIR score and concurrency within a partnership, adjusting for variables that have been identified in the literature as potential confounders. Adjusted analyses controlled for statistically and theoretically relevant confounders including age, participant's race, and guardian's education. Based on substantial differences between casual and main partnerships among adolescents, we did not adjust for partner type. Last, we examined effect modification by variables identified in the literature as potential moderators for the relationship between gender role beliefs and concurrency. These included race, SES (guardian's education), and type of partnership. The process included: first, conducting multivariate analyses stratified by the moderating variable then including an interaction term for the moderator and PAIR score in our multivariate model. All analyses were stratified by sex using index partner concurrency as the outcome variable among males and sex partner concurrency as the outcome variable among females. Adjusted odds ratios, 95% confidence intervals, and p-values were used to assess significance in final models.

## **RESULTS**

### ***Demographic and Behavioral Characteristics of the Sample***

Tables 4.1 and 4.2 present descriptive statistics for male (n=106) and female (n=166) adolescents with a total of 462 sexual partnerships. Variables are divided by individual-level and partnership-level. Participants ranged in age from fifteen to twenty-four (mean age of 21). Sixty-six percent identified as African American and 34% identified as White. Approximately 49% of participants reported that their primary guardian had achieved a level of formal education greater than high

school. The average age at first sex was significantly lower ( $p<.01$ ) among males (14.3) than females (15.7) and males also reported significantly more ( $p<.01$ ) partners in the past three months. Twenty-five percent of males reported ever being incarcerated compared to only 9% of females ( $p<.01$ ). Approximately nine percent of both males and females had ever been diagnosed with an STI. Females had a significantly higher ( $p<.01$ ) average PAIR score (3.39) than males (2.96), indicating more equitable beliefs about power in heterosexual relationships.

The number of heterosexual partnerships per person ranged from 1 to 7 with males reporting an average of 2.28 partners in the past six months and females reporting an average of 1.58 partners in the past six months. Thirty-two percent of respondents described one partnership, 20% described two partnerships, 18% described three partnerships, and less than 10% described each of four, five, six, and seven partnerships. Among males, 76% of sex partners were African American compared to 56% among females. Racial concordance was high within male (Kappa=85.6%;  $p<.001$ ) and female-reported partnerships (Kappa=86.4%;  $p<.001$ ) (Not shown). Females were significantly more likely than males to label a sex partner as a “main” partner (51% versus 24%,  $p<.001$ ). An age difference of two or more years between sex partners was more commonly reported among females (44%) than males (38%) with females also more likely to have a sex partner who had ever been incarcerated (26% versus 2%,  $p<.001$ ). Females were significantly more likely to report sex partner concurrency in a partnership (28% versus 11%,  $p<.05$ ) and males were only slightly more likely to report index partner concurrency (33% versus 31%). Six percent of males reported that their partner had an STI compared to 9% of females. Finally, condoms were used at last sex in 59% of partnerships.

#### ***Attitudes Towards Relationship Power and Index Partner Concurrency among Males***

Among male adolescents, PAIR score was significantly associated with index partner concurrency in bivariate regression analysis (Unadjusted Odds Ratio (OR)= 0.49; 95%CI=.26-.91;  $p<.05$ ) such that males with more equitable beliefs regarding the balance of power in

relationships were less likely to have a concurrent sexual relationship (See Table 4.3). Males who reported two or more partners in the past three months ( $OR = 6.73$ ;  $95\%CI = 1.92-23.66$ ;  $p < .01$ ) and a sex partner with an STI ( $OR = 7.13$ ;  $95\%CI = 1.55-32.75$ ;  $p < .05$ ) were also more likely to report index concurrency in a partnership in bivariate analyses. Partner's race was also significantly associated with index partner concurrency. In the bivariate model, males with a White female sex partner were less likely to have a concurrent sexual relationship than males with an African American partner ( $OR = 0.20$ ;  $95\%CI = .05-.85$ ;  $p < .05$ ).

Our final multivariate model for the association between PAIR score and index partner concurrency is located in Table 4.4. Partner's race was left out of the final model due to high levels of racial concordance within partnerships among males. After adjusting for participant's race, guardian's education, and age, there remained a significant association between PAIR score and index partner concurrency (Adjusted Odds Ratio (AOR) = 0.42;  $95\%CI = .19 - .91$ ;  $p < .05$ ), suggesting that attitudes towards relationship power may be independently associated with concurrency among males. Race was also significantly associated with index partner concurrency in the multivariate model (AOR = 0.17;  $95\%CI = .03 - .94$ ;  $p < .05$ ).

Effect modification was tested by race, socioeconomic status (guardian's education), and partner type (See Table 4.5). In racially stratified analyses, adjusting for participant's age and guardian's education, PAIR score was inversely associated with index partner concurrency among both African American (AOR = .45;  $95\%CI = .18-1.08$ ;  $p = .073$ ) and White males (AOR = .28;  $95\%CI = .10-.77$ ;  $p < .05$ ). However, the association was only significant among White adolescent males. When a race by PAIR score interaction term was included in the final model, it was not significant ( $p = .403$ ). In multivariate analyses stratified by guardian's education, PAIR was significantly and inversely associated with index partner concurrency among middle SES (AOR = .18;  $95\%CI = .06-.50$ ;  $p < .01$ ) but not low SES males (AOR = 1.15;  $95\%CI = .37-3.52$ ;  $p = .809$ ), after adjusting for age and race. When a guardian's education by PAIR score interaction term was included in the multivariate model, it achieved statistical significance ( $p = .009$ ).

Stratification by type of partnership showed a significant association between PAIR and index partner concurrency in main (AOR=.08; 95%CI=.17-.40;  $p<.01$ ) but not casual (AOR=.55; 95%CI=.26-1.18;  $p=.127$ ) partnerships, after adjusting for race, guardian's education, and age. The interaction between partnership type and PAIR score was statistically significant in the final multivariate model ( $p=.033$ ).

Stratifying further into racial/socioeconomic strata (Table 4.6), showed a significant negative association between PAIR score and index partner concurrency among middle SES, African American males (AOR=0.18; 95%CI=0.05-0.58;  $p<.01$ ). The association trended in the same direction among middle SES, White males and was approaching statistical significance (AOR=0.21; 95%CI=0.04-1.16;  $p=.073$ ). No significant association was present among low SES White (AOR=0.51; 95%CI=0.19-1.40;  $p=.193$ ) or low SES African American males (AOR=1.29; 95%CI=0.37-4.44;  $p=.689$ ).

#### ***Attitudes Towards Relationship Power and Sex Partner Concurrency among Females***

PAIR score was significantly associated with sex partner concurrency among female adolescents in bivariate regression analysis (OR=2.74; 95%CI=1.48-5.07;  $p<.01$ ) indicating that females with more equitable beliefs regarding the balance of power in relationships were more likely to have a sex partner in a concurrent sexual relationship (See Table 4.3). Among the other demographic, behavioral, and partnership characteristics tested in bivariate analyses, only partner's race was significantly associated with sex partner concurrency. Females with a non-White, non-African American sex partner were less likely to experience sex partner concurrency within a partnership than females with an African American partner (OR=0.07; 95%CI=.006-.739;  $p<.05$ ).

Our final multivariate model for the association between PAIR score and sex partner concurrency among females is located in Table 4.4. Due to the high level of racial concordance within partnerships among females, partner's race was left out of the final model. There remained a significant positive association between PAIR score and sex partner concurrency (AOR= 2.45;

95%CI=1.39 – 4.31;  $p<.01$ ) among females after adjusting for participant's race, guardian's education, and age, pointing to an independent association between attitudes towards relationship power and sex partner concurrency. Also significant in the final model was the association between guardian's education and sex partner concurrency (AOR= 0.39; 95%CI=.16 – .96;  $p<.05$ ).

Race, socioeconomic status (guardian's education), and partner type were examined as potential effect modifiers for the relationship between PAIR score and sex partner concurrency among females (See Table 4.5). Racially stratified analyses showed a positive and statistically significant association between PAIR and sex partner concurrency among African American (AOR=3.44; 95%CI=1.51-7.85;  $p<.01$ ) but not White (AOR=1.54; 95%CI=.24-4.05;  $p=.252$ ) females, after adjusting for age and guardian's education. In the multivariate model, the interaction between race and PAIR score was not statistically significant ( $p=.299$ ). Analyses stratified by guardian's education produced positive associations among both low SES (AOR=4.60; 95%CI=2.3-9.0;  $p<.01$ ) and middle SES (AOR=1.78; 95%CI=.85-3.73;  $p=.129$ ) females, after adjusting for participant's age and race. However, the relationship was only significant among low SES females. When a guardian's education by PAIR score interaction term was included in the final model, it bordered on statistical significance ( $p=.07$ ), suggesting important SES-based differences in the relationship between PAIR score and sex partner concurrency among females. PAIR score and sex partner concurrency were positively, significantly associated in both casual (AOR=2.41; 95%CI=1.17-4.97;  $p<.05$ ) and main (AOR=2.91; 95%CI=1.46-5.8;  $p<.01$ ) partnerships among females, after adjusting for race, guardian's education, and age. The interaction between partnership type and PAIR score was not statistically significant in the final multivariate model ( $p=.817$ ).

When analyses were further divided into racial/socioeconomic strata (Table 4.6), PAIR score was found to be significantly, positively associated with sex partner concurrency only among low SES, African American females (AOR=6.80; 95%CI=2.19-21.11;  $p<.01$ ).

Associations trended in the same direction among middle SES, African American females (AOR=1.45; 95%CI=0.49-4.27;  $p=.497$ ) and middle SES, White females (AOR=1.67; 95%CI=0.67-4.18;  $p=.266$ ) but were not statistically significant.

## DISCUSSION

The goals of this study were to quantitatively assess the associations between male and female adolescents' gender role beliefs and concurrency within heterosexual partnerships and to examine whether these associations varied by race, socioeconomic status, and type of partnership. The practice of concurrency was common in our study sample, demonstrating its salience as a risk factor for STI transmission among adolescents in Baltimore. Results indicated that male adolescents who held more equitable attitudes towards the balance of power in sexual relationships were less likely to engage in index partner concurrency. Conversely, female adolescents who adhered to more equitable gender-related attitudes were more likely to experience sex partner concurrency. These relationships differed significantly by socioeconomic status among males and females and sexual partner type among males.

Study findings confirmed the existing qualitative and quantitative literature that has linked traditional gender role attitudes to sexual risk behavior in male adolescents (O'Sullivan et al. 2006; Pleck and O'Donnell 2001; Pleck, Sonenstein, and Ku 1993; Santana et al. 2006). Among female adolescents, however, a more complex picture emerged. Although there was a significant association between PAIR score and sex partner concurrency, it was not in the expected direction. Contrary to findings from previous studies (Kerrigan et al. 2008; Kerrigan et al. 2007), in our sample, more equitable gender-related attitudes appeared to put adolescent females at greater risk for sex partner concurrency. This finding contributes to a larger body of research which suggests that both equitable and inequitable gender-related attitudes can influence STI risk in adolescent females (Leech 2010). It also suggests that further research is needed to explore the context of concurrency as it occurs within adolescent relationships.



Type of concurrency may be particularly important when exploring the linkages between concurrent sexual relationships and gendered beliefs about relationship power. Previous studies have identified multiple forms of concurrency with differing implications for relationship dynamics and STI risk (Gorbach et al. 2002; Hess et al. 2012). For example, “reactive concurrency”, which is motivated by revenge and is often a one time response to a sex partner’s concurrency, is a very different phenomenon than “transitional concurrency”, or the overlap of sexual partnerships occurring towards the end of one relationship and beginning of another (Gorbach et al. 2002). In our study, high levels of agreement between index partner and sex partner concurrency within female-reported (76.98%) and male-reported (79.19%) partnerships suggest that these two forms of concurrency may not take place in isolation. Rather, they may more commonly occur simultaneously as part of a casual partnership, in reaction to a partner’s concurrency, or reciprocally in an open relationship. These data may help to explain the positive association between equitable gender role beliefs and sex partner concurrency among female adolescents, rendering the literature’s common portrayal of females as powerless and passive in the face of sex partner concurrency (Kerrigan et al. 2007; Towner, Dolcini, and Harper 2012) a potentially inaccurate depiction of urban adolescent relationships. Consequently, this reciprocal sex partner concurrency may put both partners at increased risk for STI infection compared to one-sided sex partner concurrency (Neaigus et al. 2012).

Our findings regarding the effect of partnership type on the relationship between PAIR score and concurrency draw further attention to the importance of partnership context in the study of concurrent sexual relationships. The expression “main partnership” has generally been used in research studies to represent a cluster of relationship characteristics including trust, emotional intimacy, and commitment. Casual partnerships, on the other hand, are a mixture of relationship types that are distinguished by a lack of these characteristics or, more simply, the belief that they are not main partnerships (Ellen et al. 1996; Katz et al. 2000). In our study, the association between attitudes towards relationship power and concurrency manifested more strongly in main

partnerships than casual partnerships among both male and female adolescents. This finding provides further evidence that casual and main partnerships are characterized by differing partner dynamics (Ellen et al. 1996; Katz et al. 2000) and suggests that a certain level of commitment and intimacy may be necessary for relationship dynamics surrounding gender and sexual behavior to fully develop in adolescent partnerships. It may also have implications for adolescents' sexual risk trajectory. As males and females make the transition from adolescence to adulthood, they are more likely to develop monogamous sexual relationships (Arnett 2003). Patterns linking gender-related attitudes and concurrency that are set in "main" partnerships during adolescence may inform their STI risk in later life. This is particularly relevant given the unique transmission dynamics related to concurrency in main partnerships. The STI risk posed by concurrency is elevated in long-term sexual relationships where a newly infected individual is most likely to quickly and recurrently expose a sex partner to the infection (Epstein and Morris 2011). Additionally, condom use is less common in main than casual partnerships making STI transmission even more likely (Ellen et al. 2002; Katz et al. 2000; Matson et al. 2011).

Adding to the complexity of the relationship between gender role beliefs, sexual risk behavior, and partner dynamics is the interwoven nature of gender role beliefs and socioeconomic forces. Gender is necessarily shaped by a broader socioeconomic context that includes culture, race, and economic stability. Consistent with the qualitative literature (Bourgois 1996; Kerrigan et al. 2007; Tsui et al. 2008; Whitehead 1997), our study found that the relationship between adolescents' attitudes towards relationship power and concurrency manifested differently in diverse socioeconomic and racial groups. Among males, there was no association between PAIR score and index partner concurrency in the low SES group but a very strong relationship was observed in the middle SES group. Additionally, the association between PAIR score and index partner concurrency was highly significant among White males but only approaching statistical significance among African American males. When analyses were further divided into racial/socioeconomic strata, the association between PAIR score and index partner

concurrency was significant among middle SES African American males and approaching statistical significance among middle SES White males. No strong associations were found among low SES males of either racial/ethnic group. While the preponderance of literature in this area, which focuses specifically on low-income African American males, posits that the relationship between traditional gender role beliefs and index partner concurrency is unique to this racial/socioeconomic stratum, our findings suggest otherwise (Kerrigan et al. 2007; Tsui et al. 2008; Whitehead 1997). This association was only found among middle SES males and was only somewhat more pronounced within African Americans. One explanation for these observed differences may be greater acceptance of index partner concurrency among low SES compared to middle SES males (Adimora, Schoenbach, and Doherty 2007; Adimora et al. 2004) regardless of one's gender role beliefs.

Among females, there was no significant association between PAIR score and sex partner concurrency in the middle SES group however, a strong relationship between more gender equitable beliefs and sex partner concurrency was observed in the low SES group. Associations trended in the same direction for both racial groups but were only significant among African Americans. After further stratifying by racial/socioeconomic subgroup, the association between higher PAIR score and sex partner concurrency was only significant among low SES African American females. Although no known studies have examined gender role beliefs and concurrency among White female adolescents, qualitative work with African American females describes a set of normative beliefs in which females are generally discouraged from practicing index partner concurrency while simultaneously being encouraged to ignore or accept their sex partner's concurrency (Reed et al. 2012; Towner, Dolcini, and Harper 2012; Kerrigan et al. 2007). Exceptions to this normative rule, however, do exist. Reed et al. (2012) noted that concurrency among African American adolescent females was deemed acceptable when a main relationship was in a state of discord. As noted above, the high prevalence of index partner concurrency and strong agreement between sex partner and index partner concurrency among

females in our sample suggests that females who ascribe to a more balanced view of power in relationships may deem reciprocal concurrency, as opposed to relationship termination, a reasonable response to relationship conflict. This may be particularly true in the case of African American, low SES females for whom substantial status and material support is conferred through the maintenance of a long-term main partnership and whose pool of potential partners is limited by the unbalanced sex ratio (Reed et al. 2012; Towner, Dolcini, and Harper 2012; Kerrigan et al. 2008). Alternatively, sex partner concurrency among male partners could be driven by females' equitable gender role beliefs. In focus group discussions with African American women in New York, participants cautioned that females who exercise power over sexual decision-making in their relationships stand a greater risk of sex partner concurrency (Senn et al. 2011).

This study has a few potential limitations that warrant consideration. First, these data were collected via self-report and may be subject to measurement error related to participant recall and social desirability bias. Partners' behaviors (e.g. sex partner concurrency) and characteristics (e.g. STI history), in particular, may be under-reported. Although measures were taken to limit the influence of social desirability bias (i.e. use of ACASI for survey administration), over and underreporting of sexual behavior may also exist. Second, although we did measure type of partnership (casual or main), we were unable to capture additional relationship qualities (e.g. relationship length, commitment, trust, respect) that are associated with monogamy among adolescents and could influence the association between PAIR score and concurrency (Towner, Dolcini, and Harper 2012; Nelson et al. 2007). Third, while the generalizability of these results has been enhanced by the study design (i.e. household-based random sample based on race and SES), gender is a context-specific construct and, thus, findings from this study may not be generalizable beyond urban adolescent populations. Last, stratification of analyses by racial/socioeconomic strata resulted in a fairly small number of partnerships per stratum (range: 25-88). Thus, while these results may suggest that certain

relationships are or are not present within racial/SES subgroups, the estimates should be viewed in light of this potential limitation on reliability.

Despite its limitations, this study has important implications for the prevention of STIs among heterosexual urban adolescents. Findings suggest that attitudes towards relationship power are an important driver of sexual concurrency in this population and that this relationship may manifest differently by sex, race, SES, and partnership type. The significant associations between PAIR score and concurrency found within African American but not White racial/SES strata may help to explain observed disparities in STIs based on race in the United States. However, the unexpected direction of this relationship among females and the strong association detected among middle but not low SES African American males suggests that further research is needed to better understand the nuances of this relationship. Reproductive and sexual health interventions that challenge people to critically reflect on gender-related beliefs, expectations, and norms have been shown to be more effective than gender-neutral programs in preventing poor sexual health outcomes (Barker et al. 2010). Implementing targeted gender-transformative interventions that recognize the complex relationship between socioeconomic context, partner dynamics, gender, and sexual behavior is an important step towards reducing STI risk in this vulnerable population.

## CHAPTER FOUR REFERENCES

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**Table 4.1. Characteristics of Males (n=106) and Females (n=166) Reporting at Least One Heterosexual Partnership in the Past 6 Months**

	<b>Total</b> (n=272)	<b>Males</b> (n=106)	<b>Females</b> (n=166)	
<b>Individual Characteristics</b>	(%)	(%)	(%)	p
<b>Age</b> (mean, SE)	20.8 (.22)	20.2 (.35)	21.4 (.22)	0.005**
<b>Race</b>				
African American	66.2	70.0	62.2	0.288
White	33.8	30.0	37.8	
<b>Guardian's Education (SES)</b>				
High school Diploma or less	50.6	48.1	53.3	0.400
Some College or more	49.4	51.9	46.7	
<b>Partners in Past 3 Months</b>				
0-1	66.7	52.7	81.4	0.000**
2+	33.3	47.3	18.6	
<b>Age at First Sex</b> (mean, SE)	15.15 (.19)	14.6 (.31)	15.7 (.21)	0.006**
<b>Years since First Sex</b> (mean, SE)	05.71 (.25)	5.62 (.43)	5.79 (.27)	0.745
<b>History of STI (non-HIV), yes</b>	9.5	9.2	9.6	0.933
<b>HIV Positive, yes</b>	0.1	0	0.2	0.320
<b>Ever Incarcerated, yes</b>	17.0	24.7	9.0	0.016*
<b>Average PAIR Score</b> (mean, SE)	03.17 (.05)	2.96 (.08)	3.39 (.04)	0.000**

\*p<.05 \*\*p<.01

**Table 4.2. Characteristics of Respondents' Partners and Relationships Reported by Males (n=221) and Females (n=241)**

	<b>Total</b> (n=462)	<b>Males</b> (n=221)	<b>Females</b> (n=241)	
<b>Partnership Characteristics</b>	(%)	(%)	(%)	p
<b>Partner's Race</b>				
African American	71.0	76.4	55.6	
White	19.5	15.1	31.8	
Other	09.5	08.5	12.4	0.197
<b>Age Difference between Partners</b>				
<2 years	60.9	62.4	56.5	
>=2 years	39.1	37.6	43.5	0.515
<b>Partner Type</b>				
Casual	69.2	75.8	49.2	
Main	30.8	24.2	50.8	0.000**
<b>Index Partner Concurrency, yes</b>	31.3	31.6	30.5	0.916
<b>Sex Partner Concurrency, yes</b>	14.9	10.8	27.6	0.002**
<b>Condom use at last sex, yes</b>	58.6	57.5	61.9	0.512
<b>Partner was incarcerated, yes</b>	10.9	02.4	25.5	0.000**
<b>Partner had STI (non-HIV), yes</b>	06.8	05.7	08.6	0.384
<b>Partner had HIV, yes</b>	01.9	02.8	00.4	0.146

\*\*p<.01

**Table 4.3. Bivariate Analyses: Associations between Individual and Partnership-level Characteristics and Concurrency within Male and Female-Reported Partnerships (N=431)**

	<b>Males (n=209)</b>		<b>Females (n=222)</b>	
	<b>Index Concurrency</b>		<b>Sex Partner Concurrency</b>	
	<b>Unadjusted OR</b>	<b>p</b>	<b>Unadjusted OR</b>	<b>p</b>
<b>Individual Characteristics</b>				
<b>Race</b>				
African American	ref		ref	
White	.34 (.06-2.01)	0.236	.77 (.27-2.16)	0.621
<b>Age</b>	1.16 (.89-1.50)	0.260	1.02 (.82-1.27)	0.855
<b>Guardian's Education (SES)</b>				
High school or less	ref		ref	
Some College or more	2.30 (.54-9.77)	0.259	.49 (.19-1.25)	0.137
<b>Partners in Past 3 Months</b>				
0-1	ref		ref	
2+	6.73 (1.92-23.66)	0.003**	1.22 (.46-3.24)	0.682
<b>Years Since First Sex</b>	0.917 (.63- 1.34)	0.654	1.08 (.89-1.31)	0.456
<b>Age at First Sex</b>	1.26 (.98-1.63)	0.073	0.87 (.686-1.12)	0.286
<b>Standardized PAIR Score</b>	0.49 (.26-.91)	0.023*	2.74 (1.48-5.07)	0.001**
<b>History of STI</b>	0.46 (.07-3.08)	0.427	2.39 (.81-7.04)	0.114
<b>Ever Incarcerated</b>	3.77 (.89-16.09)	0.072	2.95 (.85-10.17)	0.086
<b>Partnership-Level Variables</b>				
<b>Partner's Race</b>				
African American	ref		ref	
White	0.20 (.05-.85)	0.029*	0.774 (.27-2.19)	0.627
Other	0.19 (.019-1.80)	0.147	0.067 (.006-.739)	0.028*
<b>Partners' Age Difference</b>				
>=2 years	ref		ref	
<2 years	0.82 (.23-2.99)	0.768	1.58 (.87-2.90)	0.134
<b>Partnership Type</b>				
Casual	ref			
Main	0.89 (.46-1.76)	0.746	0.67 (.36-1.27)	0.217
<b>Condom use at last sex, yes</b>	1.54 (.58-4.13)	0.384	.938 (.40-2.19)	0.882
<b>Partner was incarcerated</b>	5.72 (.75-43.87)	0.093	1.73 (.63-4.73)	0.288
<b>Partner had STI (non-HIV)</b>	7.13 (1.55-32.75)	0.012*	2.71 (.68-10.63)	0.153

\*p<.05 \*\*p<.01

**Table 4.4. Multivariate Analyses: Adjusted Associations between Individual and Partnership-level Characteristics and Concurrency in Male and Female-Reported Partnerships (N=425)**

	<b>Males (n=205)</b>		<b>Females (n=220)</b>	
	<b>Index Partner Concurrency</b>		<b>Sex Partner Concurrency</b>	
	<b>Adjusted OR</b>	<b>p</b>	<b>Adjusted OR</b>	<b>p</b>
<b>PAIR Score</b>	0.42 (0.19 – 0.91)	0.028*	2.45 (1.39-4.31)	0.002**
<b>Race</b>				
African American	ref		ref	
White	0.17 (0.03-0.94)	0.042*	0.91 (0.35-2.37)	0.850
<b>Guardian's Education (SES)</b>				
High school or less	Ref			
Some College or more	1.84 (0.37-9.15)	0.453	0.39 (0.16-0.96)	0.040*
<b>Age</b>	1.20 (0.84-1.74)	0.316	1.05 (0.87-1.27)	0.603

\*p<.05 \*\*p<.01

**Table 4.5. Multivariate Analyses Stratified by Race/Ethnicity, SES, Partner Type and Sex: Adjusted Associations between PAIR Score and Concurrency in a Partnership**

	Males			Females		
	Index Partner Concurrency			Sex Partner Concurrency		
	n	Adjusted OR	p	n	Adjusted OR	p
<b>Race</b>						
African American	148	0.45 (0.18-1.08) <sup>a</sup>	0.073	144	3.44 (1.51-7.85) <sup>a</sup>	0.004**
White	71	0.28 (0.10-0.77) <sup>a</sup>	0.014*	95	1.54 (0.24-4.05) <sup>a</sup>	0.252
<b>Guardian's Education (SES)</b>						
High school or less	82	1.15 (0.37-3.52) <sup>b</sup>	0.809	83	4.60 (2.34-9.04) <sup>b</sup>	0.000**
Some College or more	123	0.18 (0.06-0.50) <sup>b</sup>	0.001**	137	1.78 (0.85-3.73) <sup>b</sup>	0.129
<b>Partner Type</b>						
Casual	126	0.55 (0.26-1.18) <sup>c</sup>	0.127	65	2.41 (1.17-4.97) <sup>c</sup>	0.017*
Main	73	0.08 (0.17-0.40) <sup>c</sup>	0.002**	154	2.91 (1.46-5.80) <sup>c</sup>	0.003**

<sup>a</sup> Adjusted for participant's age and guardian's education

<sup>b</sup> Adjusted for participant's age and race

<sup>c</sup> Adjusted for participant's age, race, and guardian's education

\*p<.05 \*\*p<.01



**Table 4.6. Multivariate Analyses within Race/SES Strata: Adjusted Associations between PAIR Score and Concurrency in a Partnership**

	<b>Males</b>			<b>Females</b>		
	<b>Index Partner Concurrency</b>			<b>Sex Partner Concurrency</b>		
	<b>n</b>	<b>Adjusted OR</b>	<b>p</b>	<b>n</b>	<b>Adjusted OR</b>	<b>p</b>
<b>SES/Race Stratum</b>						
Low SES, African American	60	1.29 (0.37-4.44)	0.689	61	6.80 (2.19-21.11)	0.001**
Middle SES, African American	88	0.18 (0.05-0.58)	0.004**	83	1.45 (0.49-4.27)	0.497
Low SES, White	28	0.51 (0.19-1.40)	0.193	25	0.98 (0.41-2.31)	0.955
Middle SES, White	43	0.21 (0.04-1.16)	0.073	70	1.67 (0.67-4.18)	0.266

Adjusted for participant's age

\*\*p<.01

## **CHAPTER 5: DISCUSSION**

## OVERVIEW

The ultimate goal of this research is to inform public health efforts that seek to reduce the burden of sexually transmitted infections within urban adolescent populations and to help diminish the observed disparities in STIs between African American and White adolescents. This line of inquiry contributes to a growing body of literature aimed at understanding the nature of gender role beliefs among adolescents and their subsequent relationship to sexual behavior.

Aims for this research were addressed through quantitative and qualitative analyses and are reflected in the three original manuscripts included in the dissertation. In this discussion chapter, findings and conclusions from each component of the dissertation are summarized followed by strengths and limitations and implications for future research and public health practice.

## SUMMARY OF FINDINGS

### *Chapter Two (Aim 1)*

The aim of chapter two was to qualitatively explore the ways in which social and economic instability, characterized by transitions and crises at the individual and community levels, shape the gender role beliefs of African American adolescents in Baltimore, MD. To address this aim, two semi-structured qualitative interviews were conducted with each of 32 male and female, low and middle SES African American adolescents.

Despite variation among participants with regards to a number of socioeconomic indicators, almost every adolescent interviewed described a life characterized by constant change and uncertainty. Participants experienced vulnerabilities that were cumulative and interconnected with periods of financial, housing, and family instability sometimes driven by family members' use of drugs or incarceration. Their families often relied on social networks for material support.

This socioeconomic instability influenced participants' gender ideology, which was conceptualized in reaction to the insecurity of their environments. To "be a man" was to be

financially stable, law-abiding, and a provider for one's partner and children. "Being a woman" meant having financial stability, maintaining a monogamous partnership, and limiting the number of children one had. For adolescents in this sample, transitioning into adulthood required resilience and the assertion of independence. This meant rising above adversity, relinquishing social support, and taking responsibility for one's "own".

Instead of reacting to their life circumstances by establishing new gender roles related to sexuality and fertility, as was found in previous studies (Kerrigan et al. 2007; Tsui et al. 2008; Kelly 1994; Whitehead 1997), participants clung to mainstream American ideals, explicitly pushing-back against their own stereotype of urban African American culture whose high birth parity, prevalence of multiple sex partners, and general economic deprivation was perceived as directly opposing these values.

These findings contribute to our understanding of the relationship between socioeconomic context and gender ideology formation during a critical period in human development. It reaffirms the message of a growing body of literature that calls on researchers to reach beyond static indicators of poverty, education, and family structure towards a more comprehensive view of socioeconomic status which embodies individuals' lived experiences of instability and uncertainty (German and Latkin 2012b, 2012a; Hatch 2005; O'Leary 2001). It also highlights the diverse ways in which instability may influence adolescents' formation of gender ideology, suggesting that a targeted approach to health promotion that recognizes these nuances is essential for successful public health programming.

### ***Chapter Three (Aim 2)***

The aim of chapter three was to assess the psychometric properties of the Power and Attitudes in Relationships (PAIR) scale and to test the association between PAIR scale score and having a risky partnership among White and African American male and female adolescents in Baltimore, MD. Using household survey data collected from 352 adolescents, the validity and reliability of

the PAIR scale were tested within four distinct adolescent populations: African American males, White males, African American females, and White females. Mean scores by item were also generated within each subgroup.

Findings indicated that PAIR is a valid and reliable measure of relationship-oriented gender-role beliefs within all four of these subgroups however, the factor structure and psychometric properties of the scale varied by sex and race/ethnicity. In each group, at least five of the eight initial PAIR items were highly correlated with each other, reflecting important similarities across groups in their conceptualization of heterosexual relationship power. Additionally, PAIR was positively correlated with the Hyperfemininity index (African American and White females), Hypermasculinity index (African American and White males), and Validation through Sex and Sexual Relationships Scale (all groups), lending credence to its validity as a measure of relationship-oriented gender-role beliefs and verifying its theoretical linkages to sex-specific gender-role beliefs.

The final structure of the PAIR scale most closely resembled the original scale among White male adolescents who retained all eight of the original PAIR items. The most items were dropped among African American female adolescents who retained only five of the original eight items. The original scale was also most reliable among White males and least reliable among African American females. This finding was surprising given that the scale was initially developed and validated among African American female adults (Sherman, Gielen, and McDonnell 2000) and may indicate substantial variation in gender role beliefs by age. After respecification, White females had the lowest reliability coefficient suggesting that, in this subgroup, important domains of relationship power remained unaccounted for by the PAIR scale. PAIR's failure to correlate with the VTSSR among White females also differentiated this group of adolescents from the others, highlighting the need for a more nuanced understanding of gender ideology in this population (Whorley and Addis 2006).

On average, the adolescents in this study supported a more equitable balance of power in heterosexual relationships, largely expressing disagreement with scale items in favor of male dominance. However, by total score and within items, African Americans of both sexes reported more traditional gender role beliefs than Whites.

This study produced conflicting results regarding the relationship between beliefs about heterosexual relationship power and sexual risk behavior among adolescents. Lower average PAIR scores, indicating more traditional beliefs about heterosexual relationship power, were significantly associated with having a high-risk sexual partnership among two sub-samples: all males and White females, after adjusting for participant's age and guardian's education. However, the opposite relationship was found in African American females. The trend associations among males echo a larger body of research which points to an association between traditional gender ideology and sexual risk behavior among adolescent males (O'Sullivan et al. 2006; Pleck and O'Donnell 2001; Pleck, Sonenstein, and Ku 1993; Santana et al. 2006). Among females, however, the findings contribute to the conflicting research on gender ideology and sexual risk behavior which has found that both equitable and inequitable beliefs can drive STI risk (Leech 2010). Results further suggest that race/ethnicity may play an important role in determining the direction of this relationship.

#### ***Chapter Four (Aim 3)***

The aim of chapter four was to quantitatively examine whether concurrency within heterosexual partnerships is associated with participants' attitudes towards relationship power and to assess whether this relationship varies by race/ethnicity, SES, and/or type of partnership among African American and White adolescents in Baltimore, MD. Bivariate and multivariate analyses were conducted using partnership-level data (N=462) from a random household sample.

The practice of concurrency was common in our study sample, demonstrating its salience as a risk factor for STI transmission among adolescents in Baltimore. Study findings confirmed

the existing qualitative and quantitative literature that has linked traditional gender role attitudes to increased sexual risk behavior in male adolescents (O'Sullivan et al. 2006; Pleck and O'Donnell 2001; Pleck, Sonenstein, and Ku 1993; Santana et al. 2006) however, among females a more complex picture emerged. Although there was a significant association between PAIR score and sex partner concurrency, it was not in the expected direction. Female adolescents who adhered to more traditional gender-related attitudes were significantly less likely to experience sex partner concurrency after adjusting for race, guardian's education, and participant's age.

Stratified analyses revealed important differences in these associations by partnership type. Particularly among males, the association between attitudes towards relationship power and concurrency manifested more strongly in main partnerships than casual partnerships after adjusting for participant's race, guardian's education, and age. This finding provides further evidence that casual and main partnerships are characterized by differing partner dynamics (Ellen et al. 1996; Katz et al. 2000) and suggests that a certain level of commitment and intimacy may be necessary for relationship dynamics surrounding gender and sexual behavior to fully develop in adolescent partnerships.

Consistent with the qualitative literature (Bourgois 1996; Kerrigan et al. 2007; Tsui et al. 2008; Whitehead 1997), findings also indicated that the relationship between adolescents' attitudes towards relationship power and concurrency may manifest differently in diverse socioeconomic and racial groups. Among males, there was no association between PAIR score and index partner concurrency in the low SES group but a very strong relationship was observed in the middle SES group after adjusting for race and participant's age. Additionally, the adjusted association between PAIR score and index partner concurrency was highly significant among White males but only approaching statistical significance among African American males. When analyses were further divided into racial/socioeconomic strata, the adjusted association between PAIR score and index partner concurrency was significant among middle SES African American males and approaching statistical significance among middle SES White males.

Among females, there was no significant association between PAIR score and sex partner concurrency in the middle SES group however, a strong relationship was observed in the low SES group after adjusting for participant's race, guardian's education, and age. Adjusted associations trended in the same direction for both racial groups but were only significant among African Americans. After further stratifying by racial/socioeconomic subgroup, the adjusted association was only significant among low SES African American females.

These findings suggest that attitudes towards relationship power are an important driver of sexual concurrency among heterosexual adolescents and that this relationship may manifest differently by sex, race, SES, and partnership type. The significant associations between PAIR score and concurrency found within African American but not White racial/SES strata may help to explain observed disparities in STIs based on race/ethnicity in the United States. However, the unexpected direction of this relationship among females and the strong association detected among middle but not low SES African American males suggests that further research is needed to better understand the nuances of this relationship.

## **STRENGTHS & LIMITATIONS**

Taken together, the three components of this study provide a more comprehensive and complex picture of the relationship between socioeconomic status, gender role beliefs, and sexual concurrency among African American adolescents than is currently available in the literature. This study's mixed-methods design allowed for an expanded scope of inquiry which addressed different components of this important issue (Greene, Caracelli, and Graham 1989). The first qualitative manuscript provided an in-depth exploration of the ways in which unstable life circumstances influence the formation of gender ideology among the group at highest risk for STIs: African American adolescents. The second manuscript built on this investigation by assessing how these gender role beliefs, in the form of attitudes towards relationship power, manifest quantitatively and differ from those of White adolescents. The third manuscript tested



the relationship between adolescents' gender role beliefs and sexual concurrency, providing insight into the ways in which gender role beliefs may contribute to STI disparities.

This research has a number of methodological strengths and limitations that should be considered when interpreting findings. These include: use of secondary, cross-sectional data, sampling methods, issues related to bias and credibility, and generalizability and transferability of results (as described in detail below).

### *Use of Secondary and Cross-Sectional Data*

Both the qualitative and quantitative components of this study utilized secondary data from a parent study that was not designed with the specific aims of this research in mind. Therefore, a few important concepts are missing from the qualitative and quantitative components of the study that may have enhanced the findings of this research. For example, in the quantitative component, measures regarding partner dynamics (e.g. trust, length of partnership, commitment) and type of concurrency (e.g. reactive, transitional) would have helped to construct a more comprehensive picture of the relationship between gender role beliefs and sexual concurrency. Additionally, a measure of actualized relationship power dynamics as a mediator of this association would have completed this study's conceptual framework (Figure 1.1). The qualitative component was not specifically focused on sexual concurrency and thus lacked the depth of data necessary to connect instability and gender role beliefs to this sexual risk behavior in our study sample.

The quantitative component of this research utilized cross-sectional data to assess the associations between adolescents' beliefs about power in heterosexual relationships and sexual risk behavior. As such, this study was limited in its ability to establish temporality. Since gender role beliefs may be both a driver and consequence of engaging in sexual risk behaviors, a causal conclusion cannot be drawn from these findings.

A cross-sectional design is further limiting because gender role beliefs are not necessarily fixed but instead may be influenced by social context including relationship dynamics. By

capturing attitudes towards relationship power at one point in time and applying this measurement to up to seven relationships in the past six months, we assumed this construct to be static over time, which was not necessarily the case.

### ***Sampling Methods & Selection Bias***

One of the primary strengths of the quantitative component of this study is its random, household-sampling strategy. This approach to sampling participants helps to minimize the selection bias that often arises from non-random sampling strategies. However, selection bias may still persist. For example, adolescents who agreed to be in the study might be different from participants who refuse based on important characteristics such as sexual risk behavior. This may be even more true among younger adolescents (<18 years) who required parental permission to participate in the study. Additionally, by recruiting adolescents who are more likely to be in their homes versus on the street, the study may not have captured those adolescents who are most likely to engage in risk behaviors and transmit STIs (Halcón and Lifson 2004; Jennings et al. 2012; Marshall et al. 2009).

Small sample size may also be a concern in the quantitative component of this research. Although the partnership-level analyses in chapter four (manuscript five) began with a fairly large sample size (N=462), after stratification by race and SES, sample sizes within racial/SES strata ranged from only 25 partnerships among low SES White females to 88 partnerships among middle SES African American males. As a result, some strata (e.g. low SES White males and females) may lack the power to detect a relationship that may actually exist. Strict rules regarding sample size in exploratory factor analysis have largely been dismissed in favor of an approach that evaluates the strength of a factor. Costello and Osborne (2005) suggest that a factor can be considered solid if five or more items load above 0.5. In the PAIR scale analyses contained in chapter three (manuscript two), both White and African American males easily met this

threshold. However, White and African American females both had less solid factor structures with only three items loading above 0.5.

In the qualitative component, purposive sampling aimed at building theory around the phenomena of race, SES, and gender role beliefs among African American adolescents allowed for an in-depth investigation of the relationship between socioeconomic circumstances and gender ideology. Based on this sampling strategy, results may not be representative of the broader population of urban African American adolescents, or even adolescents in Baltimore City, but they do provide insight into a more fundamental picture of how instability can translate into gender role beliefs.

#### ***Additional Biases, Missing Data & Credibility***

Like all studies, this research is limited by the availability and accuracy of collected data. Both quantitative and qualitative data were collected via self-report and may be subject to measurement error related to social desirability bias and participant recall. An important strength of our quantitative research was the use of Audio and Computer Assisted Self-Interviewing for quantitative survey administration. A number of studies have shown that ACASI elicits more reports of sensitive behaviors and fewer reports of socially sanctioned behaviors compared to telephone and face-to-face interviews, demonstrating its measurable effect on social desirability bias (Schroder, Carey, and Vanable 2003). However, the effect of social influence on data may still persist, skewing findings towards more gender equitable attitudes and fewer reports of sexual risk behaviors including index and sex partner concurrency. Due to limitations on participants' knowledge of their sex partners, partners' behaviors (e.g. sex partner concurrency) and characteristics (e.g. STI history, age) may also be inaccurately reported in the quantitative data and could be more problematic in the case of casual versus main partners. Additionally, the proxies chosen to represent complex constructs such as attitudes towards power in heterosexual relationships (PAIR scale), socioeconomic status (guardian's education), and relationship quality

(type of relationship) may not adequately capture these constructs, leading to residual confounding or limiting the validity of observed associations.

Although social desirability and recall biases also have the potential to distort findings in the qualitative component of this dissertation, the research was approached with attention to the dynamics between the interviewer and interviewee and a cognizance of how these dynamics might affect the nature and quality of the data obtained. In order to decrease participant discomfort and allow rapport to build between the interviewer and interviewee, two interviews were conducted with each participant and topics moved from less to more sensitive over time. Additionally, the analysis of interviews was approached with an understanding that the data represent the lived experiences of participants as they chose to convey them to the interviewers. Although the researcher's own background and biases unavoidably informed the interpretation of study data, an iterative data analysis process in which study team members were consistently consulted regarding findings and interpretations of data helped to ensure credibility of findings.

### ***Generalizability & Transferability***

The quantitative component of this research, which utilizes a household-based stratified random sample, was designed to increase the generalizability of findings. Its inclusion of African American and White adolescents from both low and middle socioeconomic backgrounds allows for results to be applied to a much broader population of adolescents living in Baltimore City and other similar urban contexts. However, the context of the data must still be taken into consideration. As demonstrated in the qualitative component of this research, gender is a highly context-specific construct that is influenced by an array of sociocultural forces. Thus, the application of these quantitative findings to different ethnic/racial groups or geographic contexts may not be appropriate.

The qualitative component of this study was designed to generate theory that could be transferable to contexts both within and outside of Baltimore City. Although our qualitative

sample was comprised of only a small group of African American adolescents, the conceptual framework that arose from the study may contribute to a deeper understanding of a fundamental relationship between socioeconomic instability and gender ideology that could have applications beyond urban African American adolescents.

## **PUBLIC HEALTH IMPLICATIONS**

Findings from this research have important implications for research and practice in the field of public health.

### ***Research Implications***

Findings from this research reiterate the message of a growing body of literature which argues that environment matters for STI risk. All three manuscripts in this dissertation highlight the important role of sociocultural, economic, and partnership context in shaping gender role beliefs and their subsequent relation to sexual concurrency suggesting that distal predictors of sexual risk behavior must be considered in STI-related research.

Results further suggest that there is a relationship between gender role beliefs and sexual concurrency among adolescents but that this relationship may be more complex than previously thought. Contrary to findings from previous studies (Kerrigan et al. 2008; Kerrigan et al. 2007), more equitable gender-related attitudes appeared to put African American adolescent females at greater risk for sex partner concurrency. This result highlights the need to differentiate between types of concurrency within STI research. Although the term “sexual concurrency” was developed to capture a risk behavior of interest to STI researchers, it does not adequately represent the lived experiences of individuals. Instead, it serves as an umbrella term that captures a very diverse set of sexual relationships, partner dynamics, and motivations (Gorbach et al. 2002). Future qualitative inquiry in this area should seek to understand the forms of concurrency that are relevant within adolescent sexual relationships. Quantitative studies should move beyond

the current standards for measuring concurrency with a direct question regarding overlapping sexual partnerships and/or the collection of start and end dates of sexual relationships (Nelson et al. 2007; UNAIDS Reference Group on Estimates 2010). Instead, a set of questions that elucidate the nature of and reason for sexual concurrency may be more informative for STI prevention efforts.

Among female participants, high rates of index partner concurrency combined with the unexpected association between more equitable beliefs about power in relationships and sex partner concurrency may provide further evidence that a paradigm shift is needed in gender-focused STI research (Higgins, Hoffman, and Dworkin 2010). The preponderance of theoretical and empirical literature in this area has adopted a “women’s vulnerability paradigm” which largely disregards the agency of females and their capability to transmit STIs within sexual relationships (Higgins, Hoffman, and Dworkin 2010). Further studies are needed to explore the ways in which females conceptualize and exercise power in relationships and how this translates into STI risk within partnerships.

Also unexpected were the strong associations between traditional gender role beliefs and index partner concurrency among middle, but not low, SES adolescent males. Until now, the majority of research on gender-role beliefs and sexual concurrency has been situated among low income African Americans. However, these findings provide evidence that the relationship between traditional gender role beliefs and sexual risk behavior in adolescent males may actually be more salient in those who are middle socioeconomic status. Associations trending in the same direction for White and African American middle SES males may indicate a similar experience within male adolescents of both racial groups. An expanded scope of qualitative research that includes adolescent males of diverse SES and racial group memberships is needed to further unpack differences and similarities between groups in the relationship between gender and concurrency.

Although this research suggests that associations do exist between gender role beliefs and sexual concurrency among adolescents, this study was limited in its ability to capture the direction of this association and its dynamic nature. Future studies should implement a longitudinal design in order to more effectively explore causal linkages between gender and STI risk. Further lines of inquiry may also seek to assess the ways in which gender role beliefs change over time and within the context of specific partnerships.

This research further contributes to the development of tools and theory that may be applicable to other adolescent populations. Quantitative findings indicate that the PAIR scale, which was initially developed and validated within a sample of urban African American women (Sherman, Gielen, and McDonnell 2000), is also a valid and reliable measurement of attitudes towards heterosexual relationship power among White and African American male and female adolescents. These results suggest that the scale may be transferable to different contexts, advancing the capacity of researchers to measure relationship-oriented gender role beliefs within diverse populations and highlighting important similarities in this construct between subgroups of adolescents.

The qualitative findings from this study provide a more nuanced picture of how socioeconomic context may shape gender role beliefs. They suggest that cumulative and interconnected periods of hardship may be more instrumental in shaping gender ideology among adolescents than more static indicators of socioeconomic status (e.g. income, education) and that this instability may be a shared experience among both middle and low SES African American adolescents. These results support the findings of previous studies that call on researchers to reach beyond static indicators of poverty, education, and family structure towards a more comprehensive view of socioeconomic status which embodies individuals' lived experiences of instability and uncertainty (German and Latkin 2012b, 2012a; Hatch 2005; O'Leary 2001). They also introduce a theoretical framework that may be applicable to contexts outside of Baltimore.

Last, this research makes a case for the importance of recognizing and investigating nuances in the nature of gender role beliefs and their subsequent relationship to sexual risk behavior based on race and SES within public health research. Prior studies on gender role beliefs have often assumed a single, equally valid standard for measuring the concept across population subgroups. This study, however, points to important and surprising differences in the conceptualization of gender roles between African American and White male and female adolescents. Varying levels of reliability and differing factor structures for the PAIR scale were found between subgroups and despite the scale's original development and validation among African American women, it was found to be most reliable and closest to its original form among White adolescent males. Testing of the association between PAIR and sexual concurrency within diverse racial/SES strata revealed further differences between subgroups with the strongest relationships found among middle SES male and low SES female African Americans.

The qualitative findings from this study further suggest that race and economic context may influence African American adolescents' formation of gender ideology in diverse ways. Contrary to previous studies which have found that low SES African Americans often react to uncertain life circumstances by establishing new gender roles related to sexuality and fertility (Kerrigan et al. 2007; Tsui et al. 2008; Kelly 1994; Whitehead 1997), this dissertation indicates that at least some African Americans of both low and middle socioeconomic status still strive for mainstream American ideals and explicitly push-back against the stereotype they hold of urban African American culture whose high birth parity, prevalence of multiple sex partners, and general economic deprivation is perceived as directly opposing these values.

Taken together, the results from this research suggest that the common practices of combining racial/ethnic and socioeconomic groups and limiting samples to one racial/SES strata in studies of gender and STI risk may, in fact, conceal important differences and similarities in the construction of gender and its relationship to sexual risk behavior among diverse groups of



adolescents. An in-depth understanding of these nuances is necessary for targeted and effective STI prevention.

### ***Policy and Practice Implications***

The results of this research suggest that concurrency is a salient predictor of STIs among adolescents and that gender role beliefs may be an important driver of this sexual risk behavior. Yet, few STI prevention interventions incorporate gender-transformative components into their programs and even less implement rigorous evaluations of their work. Reproductive and sexual health interventions that challenge people to critically reflect on gender-related beliefs, expectations, and norms have been shown to be more effective than gender-neutral programs in preventing poor sexual health outcomes (Barker et al. 2010). However, many of these interventions have been focused in adult populations in international contexts.

Within the United States, and particularly urban areas, there is a need to incorporate and test gender-transformative approaches within school and community-based adolescent STI prevention interventions. Implementing and evaluating targeted programs that recognize the complex relationship between socioeconomic context, partner dynamics, gender, and sexual behavior is an important step towards reducing STI transmission.

### **CONCLUSION**

The reduction of racial disparities in STIs requires that researchers and public health practitioners take a comprehensive approach to disease prevention that addresses the root causes of transmission. Gender role beliefs are a universal component of the human experience and may be a particularly salient predictor of sexual concurrency among African American adolescents. Understanding the nature of these beliefs and their nuanced relationship to sexual behavior is a first step towards improving health outcomes for millions of adolescents.

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## **APPENDIX A: RESEARCH METHODS**

### **Overview of Study Design**

This research used a mixed methods approach to investigate the relationship between socioeconomic status, gender role beliefs, and sexual concurrency among African American adolescents. Components include a qualitative analysis of in-depth interview data and quantitative analyses of household survey data. The design allowed for an expanded scope of inquiry that addressed different facets of this important issue

### **Study Population**

#### ***Quantitative***

Data for the current study were derived from the baseline questionnaire of a longitudinal study whose main objective was to explore the role of gender ideology in driving sexual behavior among adolescents. The study population for the quantitative component of the parent study was low and middle SES (defined by mother's education level), sexually active, White and African American adolescents living in Baltimore, MD. The eligibility criteria were: a) aged 15-24 years old; and b) ever had vaginal intercourse with a person of the opposite sex. For this study, the sample was restricted to individuals who reported heterosexual intercourse in the past six months.

#### ***Qualitative***

For the qualitative component, the study population was low and middle SES, sexually active African American adolescents living in Baltimore, MD. The eligibility criteria were: a) aged 18-24; b) engaged in a heterosexual relationship (including vaginal and/or oral sex) for longer than 3 months in the past 3 years; and c) lives in Baltimore City.

### **Participant Recruitment and Data Collection Procedures**

#### ***Qualitative***

### Recruitment

Qualitative data was collected from June through December, 2011. Sampling for the qualitative component of the study was concurrent with and independent of the quantitative sampling strategy. Thirty-two participants (8 low SES females, 8 middle SES females, 8 low SES males, 8 middle SES males) were recruited from shopping malls at Eastpoint and the Inner Harbor as well as the University of Baltimore. Participants were sampled purposively to attain variation in SES and sex. Participants' SES was determined by asking adolescents whether the residence they spent the most time in growing up was owned (yes=middle SES), whether they received free lunch in school (no=middle SES) and whether their primary caregiver completed any college (yes=middle SES). If participants answered two or more questions as "middle SES", they were considered to be middle SES. Otherwise, they were considered "low SES". All participants were approached individually and explained the purpose of the study before being screened for eligibility. Participants' average age was 19 years old. Forty-eight percent had a caregiver with no college education and 66% received free school lunch as a child. Fifty-three percent of participants reported that their childhood home was owned.

*Informed Consent:* Written informed consent was obtained from all participants before the first interview.

### Data Collection

Two in-depth interviews were conducted with each of 30 participants. Two participants completed the first interview only (one low SES male and one low SES female). Interviews were conducted in the mall food court, University's student center, or on a public bench near the location of recruitment. The three study staff, who conducted interviews, were female graduate students in their late 20s to early 30s, two of whom were White and one of whom identified as multi-ethnic. Interviews were semi-structured and facilitated through the use of an interview guide. Two separate interviews were conducted to allow for increased rapport to develop between

the interviewer and interviewee and to minimize participant fatigue. The first interview explored the participants' experiences with gender and class growing up including the participants' goals, role models, parental expectations, perceptions of being a man/woman, and perceived class membership. The second interview explored the participants' self-perceptions, visions of the ideal romantic relationship, dynamics (including power, control, and decision-making) in their most recent romantic relationships, sexual, and contraceptive decision-making. In general, topics moved from less to more sensitive, however interviewers were permitted flexibility to discuss topics as they naturally arose in conversation and to probe relevant information that was not anticipated by the guide. Interviews lasted between 40 and 90 minutes each. Interviewees received \$25 pre-paid debit cards for participating in the first interview and \$35 for participating in the second interview. All interviews were tape-recorded and transcribed verbatim by an outside transcription company. Each transcript was cleaned by the staff member who conducted the interview.

## ***Quantitative***

### **Recruitment**

Data were collected from February, 2011 through May, 2013. The study recruited 352 White and African American adolescents living in Baltimore, MD. Participants were recruited from a citywide household sample based on 254,458 residential addresses from 699 of Baltimore's 710 census block groups (CBGs). Households were randomly selected from CBGs chosen to represent low (no college education) and middle (some college education or higher) SES neighborhoods with majority White or African American populations. CBGs with higher concentrations of Whites and college-educated African Americans were oversampled to help ensure a balanced distribution of survey participants with regards to race and SES.

All sampled households received a letter explaining the purpose of the study two weeks prior to being contacted by study staff. Research assistants contacted each household either by phone or



in-person to determine if one or more 15-24 year olds lived within the home. One participant was enrolled in the study per household. To participate, respondents were required to meet the age requirement and report ever having had vaginal intercourse with a person of the opposite sex. In households with more than one eligible person, one adolescent was randomly selected for screening.

*Informed Consent:* For participants 18 years or older, consent to screen was obtained before screening took place. If, after screening for eligibility, the individual was eligible and interested in participating, he or she provided written informed consent. For participants under 18 years old, consent to screen was obtained from the potential participant and his or her parent/guardian. If, after screening for eligibility, the individual was eligible and interested in participating, he or she provided written informed assent and the parent/guardian provided written informed consent.

### Data Collection

The survey was administered by A-CASI (audio computer assisted self-interview) software in a private area in the participant's house. The survey ascertained socio-demographic information, sexual history including number of sexual partners and index and sex partner concurrency, attitudes towards condoms, condom negotiation, pregnancy desire, condom intentions, characteristics of sexual partners, alcohol use, drug use, gender role beliefs including attitudes towards power in relationships, depression, self-esteem, and value placed on relationships. Following survey completion, participants received a \$25 pre-paid debit card for their time.

### **Data Analysis**

### **Chapter Two: Manuscript 1**

#### ***Qualitative***

Interpretations of the data were recorded throughout the qualitative study period to provide context for data analysis. Analysis was informed by a deductive approach in which themes were established a priori by the study's research questions, the interview guides, and relevant theory, and through an inductive approach in which themes emerged from the data itself. To minimize biases that could arise from a single researcher's perspective, the three qualitative interviewers were all involved in the coding process. We selected a cross-section of six interviews that were coded using an open coding method. Topics were identified then grouped into larger themes, which were further organized into a coding scheme. To ensure consistency, four additional transcripts were coded based on the new coding scheme and transcripts were compared. When disagreements over coding or new themes arose, they were discussed as a group and the coding scheme was modified. All transcripts were coded using *Atlas.ti* version 7.0 (Scientific Software Development 2012), qualitative data analysis software that assists in organization and retrieval of interview data. Data were compared across and within cases to identify common experiences while also recognizing the uniqueness of each individual's account. Particular attention was given to differences based on gender and class. The paper writing process was informed by frequent consultations with the study team.

The researchers sought to understand the data not from a strictly positivist perspective, but as representing participants' experiences as they chose to convey them to outsiders. Reflexivity was exercised throughout data analysis, grounded in the recognition that our own backgrounds and personal biases could affect the nature of data collected and conclusions drawn from it.

## **Quantitative**

### **Chapter Three: Manuscript Two**

#### ***Survey Measures***

*Attitudes towards Power in Relationships* was measured using the PAIR (Power and Attitudes in Relationships) scale (Sherman, Gielen, and McDonnell 2000). PAIR was based on the theory of Gender and Power (Connell 1987) and was previously developed and validated in a sample of African American women (N=417) living in Baltimore City. The scale consists of eight self-reported items that represent four domains related to participants' beliefs regarding the balance of power in heterosexual relationships (i.e. perceived need to be in a relationship, division of household labor, sexual assertion, and decision-making). All items were measured on a four point Likert Scale from 1 (strongly agree) to 4 (strongly disagree) with lower scores reflecting traditional gender role beliefs that favor male dominance in relationships and higher scores indicating support for more gender-equitable relationships. In the previous validation study, the scale had good reliability (Cronbach's  $\alpha = .79$ ) and represented a single factor (Sherman, Gielen, and McDonnell 2000).

*Hyperfemininity* was measured using the Hyperfemininity index (HFI) (Murnen and Byrne 1991). The HFI comprises 26 self-reported items that represent broad domains related to feminine gender ideology including importance of intimate relationships with men, sexuality and physical appearance as a means to secure an intimate relationship, and support for traditional sexual behaviors and beliefs among men. Each item presents a binary response option with one choice representing the "hyperfeminine" belief and the alternative representing a more equitable belief. For example, the participant is asked to choose between two statements: "sometimes I care more about my boyfriend's feelings than my own" and "it is important to me that I am as satisfied with a relationship as my partner is". The scale was originally validated among 145 American female undergraduate students (Murnen and Byrne) and was found to represent a single factor solution with good internal consistency reliability (Cronbach's  $\alpha = .76$ ). It was later validated as a single factor among 155 African American adolescent females in Baltimore, MD with a reliability coefficient of .70 after dropping 6 scale items (Kerrigan, 2008).

*Hypermasculinity* was measured using the Hypermasculinity index (HMI) (Mosher and Sirkin 1984). Originally 30 self-reported items, the scale was validated among undergraduate male university students (N=135) as a measure of exaggerated masculine personality characteristics including status, toughness, and anti-femininity. All items were scored on a four point Likert Scale from 1 (strongly agree) to 4 (strongly disagree) with lower scores reflecting more traditional beliefs about masculinity and higher scores reflecting less traditional beliefs. Examples of items include: “a man should never back down in the face of trouble” and “it bothers me when a man acts like a girl”. We used a subset of 11 items, representing the domains of status and toughness, which were validated by Thompson and Pleck (1986).

*Validation through Sex and Sexual Relationships* was measured using the *Validation through Sex and Sexual Relationships Scale (VTSSR)*. The VTSSR consists of 12 self-reported items that measure individuals’ perceived importance of being in a sexual relationship. Scale domains include evaluation of self-worth through sexual relationships (e.g. “I do not think positively about myself when I am not having sex regularly”) and perceived social pressure to engage in sex (e.g. “my friends respect me more when I am in a sexual relationship”). Response options are on a Likert Scale from 1 (strongly agree) to 4 (strongly disagree) such that a lower score reflects a greater need for personal and social validation through sex. The scale was developed and validated in a sample of African American men and women in Baltimore, MD and was found to have good internal consistency among both males ( $\alpha=0.77$ ) and females ( $\alpha=0.87$ ) (Towe 2009).

*High-Risk Sex Partnership*, our outcome variable, was dichotomous and defined as: self-report of three or more sex partners in the past 90 days, having a sex partner who practiced concurrency in the past 6 months, exchanged sex in the past 6 months, or having had an HIV+ and/or IDU sex partner in the past 6 months (Jennings et al. 2012).

*Additional Demographic and Behavioral Variables* that were assessed include: race/ethnicity (African American; White), age (continuous), primary guardian's level of education (some college or more; high school diploma or less), age at first sex (years, continuous), years since first sex (continuous), ever been diagnosed with an STI (yes; no), sex partners in the past three months (0-1; 2+), condom use at last sex (yes; no), and type of most recent partnership (main; casual).

### ***Statistical Analyses***

The current analyses were limited to 274 participants who reported having one or more heterosexual relationship in the past six months. Preliminary statistical analyses included exploratory data analyses, calculation of statistical analysis weights to account for the study's complex sampling strategy, and calculation of weighted summary statistics. Weighted summary statistics included means and standard errors (SE) for continuous variables and proportions for categorical variables. All statistical analyses were conducted using STATA version 11 software (StataCorp 2009).

A PAIR score was constructed for each participant by summing item responses then dividing the total by the number of non-missing items. Item 3 was reverse-coded to reflect the direction of the other scale items. Means and standard errors were generated for each item for males and females separately and stratified by race. To account for the complex survey design, adjusted Pearson Wald F-statistics were used to assess differences in mean item scores by sex and race.

Since the PAIR Scale had only been validated in one previous study, and never among males or adolescents, we used exploratory factor analysis to confirm scale domains. Of 276 respondents, one male and one female were dropped due to missing answers for one or more of the scale items. All analyses were conducted for males and females separately then stratified by race. Principal-components analysis and a visual inspection of the scree plot were used to select

the appropriate number of factors represented by the scale. Factor analysis was then performed using the maximum likelihood method with a Pearson's correlation matrix. Factor loadings and uniqueness were examined to determine whether there were free-standing items which should be dropped from the scale. Although there is no concrete cut-off for factor loadings in the social sciences, a loading of .32 or above has been cited as a good "rule of thumb" for retaining items in a factor (Costello and Osborne 2005). Thus, items loading at or above .32 were considered a good fit for the attitudes towards power in heterosexual relationships construct. When one or more items were deleted, EFA was conducted again to assess the fit of the respecified scale.

External construct validity of the PAIR scale was assessed by testing correlations between participants' PAIR scores and other theoretically relevant constructs. These included hyperfemininity (females only) (Murnen and Byrne 1991), hypermasculinity (males only) (Mosher and Sirkin 1984), and validation through sex and sexual relationships (males and females) (Towe 2009). Positive and significant correlations between these constructs were considered to represent good external construct validity. Internal consistency reliability analyses were conducted by calculating a Cronbach's alpha ( $\alpha$ ). A Cronbach's alpha  $\geq .6$  was considered acceptable based on its widespread acceptance as a minimum standard for reliability within the social sciences (Nunnally and Bernstein 1991).

The association between PAIR score and having a high-risk sex partnership was assessed using weighted simple and multivariate logistic regressions. Given the non-normal distribution of the measure in all four subgroups, PAIR scores were Z-transformed for the purposes of bivariate and multivariate analyses. Adjusted Pearson Wald F-statistics were used to assess bivariate associations between PAIR score, demographics characteristics, and our outcome (high-risk sex partnership). Adjusted and unadjusted logistic regression analyses were then conducted to assess the association between PAIR and having a high-risk sex partnership. Adjusted analyses controlled for statistically and theoretically relevant confounders including age and guardian's

education. All regression analyses were stratified by sex then by race. Adjusted odds ratios and 95% confidence intervals were used to assess significance in final models.

#### **Chapter Four: Manuscript Three**

##### ***Survey Measures***

##### ***Partner/ Relationship-Level Variables***

*Outcome Variables:* Two outcome variables were considered for this study: index partner concurrency (for males) and sex partner concurrency (for females). We used different outcomes for males versus females based on findings from the theoretical and empirical literature which suggest that the relationship between gender role beliefs and index partner concurrency is particularly salient among males whereas the relationship between gender role beliefs and sex partner concurrency is most consequential among females. For males, index partner concurrency was dichotomous (yes=1; no=0) and defined as self-report of having one or more sexual partnership(s) that overlapped in time with the reported sexual relationship. We assessed index partner concurrency by asking, for each partnership, “Did you have sex (meaning ONLY anal or vaginal sex) with anyone else while you were seeing [partner’s name]?”. For females, sex partner concurrency was dichotomous (yes=1; no=0) and defined as the self-report of a partner having one or more sexual partnership(s) that overlapped in time with the reported sexual relationship. We assessed sex partner concurrency by asking, for each partnership, “Did [partner’s name] have sex (meaning ONLY anal or vaginal sex) with anyone else at any point while you were seeing him?”.

*Relationship/Partner Characteristics:* Relationship characteristics considered for this study included type of partnership, condom use at last sex, and age difference between partners. Partner characteristics included participant’s report of partner’s race, STI history, and incarceration history. Type of partnership was dichotomous (main; casual) and was assessed by asking “Do you

consider [partner's name] a main or casual partner?". Main partner was defined as "someone you have sex with and you consider to be the person you are serious about". Casual partner was defined as "someone you've had sex with only once or a few times or you have sex with on an ongoing casual basis. The important thing is that this person is not a main partner to you. Condom use at last sex was measured with the question "the last time that you had vaginal/anal sex with [partner's name], did you use a condom?" and dichotomized (yes; no). Age difference between partners was generated by subtracting the female partner's age in years from the male partner's age in years then dichotomizing the variable ( $\geq 2$  years;  $< 2$  years). Partner history of STI was dichotomous (yes; no) and was assessed by asking, "Has [partner's name] ever been diagnosed with an STD?". Partner's incarceration history was measured by asking, "Has [partner's name] ever been incarcerated?". Partner's race was categorized as African American, White, or other.

### ***Individual Level Variables***

*Primary Exposure Variable:* The primary independent variable considered was attitudes towards power in relationships. This construct was measured using the PAIR (Power and Attitudes in Relationships) scale (Sherman, Gielen, and McDonnell 2000). PAIR was based on the theory of Gender and Power (Connell 1987) and was originally developed and validated in a sample of African American women (N=417) living in Baltimore City. The scale consists of 8 self-reported items that represent four domains related to participants' beliefs regarding the balance of power in heterosexual relationships (i.e. perceived need to be in a relationship, division of household labor, sexual assertion, and decision-making). All items were measured on a four point Likert Scale from 1 (strongly agree) to 4 (strongly disagree) with lower scores reflecting traditional gender role beliefs that favor male dominance in relationships and higher scores indicating support for more gender-equitable relationships. In the original validation study, the scale had good reliability



(Cronbach's  $\alpha = 0.79$ ) and represented a single factor (Sherman, Gielen, and McDonnell 2000).

In our study, the PAIR scale had an initial internal consistency reliability coefficient (Cronbach's  $\alpha$ ) of 0.65 among all females and 0.82 among all males. After deleting one item from both the males and female PAIR scales due to low factor loadings ( $<.32$ ), reliability increased to 0.68 among females and 0.85 among males, levels which were considered acceptable based on the widespread acceptance of  $\alpha \geq .6$  as a minimum standard for reliability within the social sciences (Nunnally and Bernstein 1991).

*Demographic and Behavioral Variables:* Self-reported demographic and behavioral characteristics included: sex (male; female), race/ethnicity (African American; White), age (continuous), age at first sex (years, continuous), years since first sex (continuous), ever been diagnosed with an STI (yes; no), ever been incarcerated (yes; no), and number of sex partners in the past three months (0-1; 2+). Participants' socioeconomic status (SES) was categorized as low or middle based on the participant's primary childhood guardian's level of education (low=high school diploma or less; middle=some college or more).

### ***Statistical Analyses***

The current analyses were limited to male and female participants who reported having one or more heterosexual relationship in the past six months. For these analyses, we constructed "individual" and "partnership-level" datasets. The "individual dataset" contained data on individual-level demographics (e.g. participant's age) and risk behavior (e.g. participant's age at first sex) for each participant. The "partnership dataset" contained data on all sexual partnerships reported for each participant in the past six months in addition to the individual-level data. Each participant could contribute data on up to seven partnerships. Male-reported partnerships missing data on index partner concurrency ( $n=12$ ), female-reported partnerships missing data on sex

partner concurrency (n=19), and individuals with one or more missing PAIR scale items (n=1 male) were excluded from regression analyses.

Preliminary statistical analyses included PAIR scale validation, exploratory data analyses, calculation of statistical analysis weights to account for the study's complex sampling strategy and clustering of partnerships at the individual level, and calculation of weighted summary statistics at the individual and partnership levels. The psychometric properties of the PAIR scale were assessed separately for males and females using principle components analysis, exploratory factor analysis, and reliability analysis. Further details on the validation process are described in previously published papers (Lilleston, unpublished). Weighted summary statistics included means and standard errors (SEs) for continuous variables and proportions for categorical variables. Significant differences between males and females were assessed using adjusted Pearson Wald F-statistics to account for the complex survey design. Continuous variables were examined for normalcy. Given the skewed distribution of PAIR scale scores among both males and females, the measure was Z-transformed for the purposes of bivariate and multivariate analyses. Kappa statistics were generated to assess racial concordance within partnerships. All statistical analyses were conducted using STATA version 11.0 software (StataCorp 2009).

Using sexual partnerships as the unit of analysis (N=462), we conducted weighted bivariate and multivariate analyses with robust standard errors. Bivariate analyses using Pearson Wald F-statistics and simple logistic regressions were conducted to explore associations between PAIR score, demographics, behavioral variables, partner and relationship characteristics, and concurrency within a partnership. Multivariate logistic regression was then used to determine the association between an individual's PAIR score and concurrency within a partnership, adjusting for potential confounders. Adjusted analyses controlled for statistically and theoretically relevant confounders including age, participant's race, and guardian's education. Based on substantial differences between casual and main partnerships among adolescents, we did not adjust for partner type. Last, we examined effect modification by variables identified in the literature as

potential moderators for the relationship between gender role beliefs and concurrency. These included race, SES (guardian's education), and type of partnership. The process included: first, conducting multivariate analyses stratified by the moderating variable then including an interaction term for the moderator and PAIR score in our multivariate model. All analyses were stratified by sex using index partner concurrency as the outcome variable among males and sex partner concurrency as the outcome variable among females. Adjusted odds ratios, 95% confidence intervals, and p-values were used to assess significance in final models.

## APPENDIX B: IN-DEPTH INTERVIEW GUIDES

### Appendix B.1: Interview 1

*Thank you for meeting with me today. As I mentioned earlier, this study is about how men and women think about being men or being women, and how relate to each other. I'll be writing down some of what you tell me to help me ask you more questions. But because you are telling me a lot of information, I won't be able to remember it or write all of it down, this interview will be tape recorded like I told you in the consent. Remember, your name will never be connected to what you say and the tape will be destroyed after the study.*

**Age of participant:** \_\_\_\_\_

**Gender (circle):**        **Male**    **Female**

#### **1.0 Family Growing up**

*Thanks so much for speaking with me today. I'd like to begin by asking you a few questions about how you grew up.*

1.1 Can you describe for me the house you spent the most time in growing up?

Probes:

What type of house?

Apartment?

How many rooms?

Where?

1.2 Tell me about the members of your family that you lived with.

Follow-up questions:

Who, how many

Who did you live with growing up?

Who else lived in the house you spent the most time in?

Parents, grandparents, aunts, uncles, cousins?

1.3 What did you do with your time?

Probes

School, sports, movies, hanging out with friends

1.4 When you were younger, what sorts of goals did you have for yourself? Meaning – what was something that you thought about doing when you grew up that was really important to you.

Probes

For a job, grades, college, sports teams

1.5 How did you come up with these goals?

Follow-up questions:

Did your friends or family influence them? Did a teacher influence them?

1.6 To what extent have you achieved these goals?

Follow-up questions:

Can you tell me more about that? Why do you think that?

1.7 Were there values that were important to your parents/guardians?

*Probes*

Being honest, hard worker, doing well in school

1.8 How did those values and expectations influence how you think about your future?

**2.0 Role models**

2.1 Think about someone you know personally that you look up to (By look up I mean you respect them). Can you describe that person to me?

2.2 If you had to pick five words to describe his/her personality, what would they be?

2.3 What do you like about this person?

2.4 Now think about someone you don't know (like a celebrity or politician or athlete) that you look up to. Can you describe that person to me?

*Probes*

What do you like about this person?

Is he or she someone you would like to be more like? In what way?

2.5 What do you think of Barack Obama? (as a role model, as a person?)

**3.0 Gender**

3.1 Were there certain things that you think your parents/caregiver expected of you because you were a girl/boy?

*Probes*

What sort of things? (behavior like washing dishes or doing other chores)?

NOTE: If respondent lived with other children ask:

*Sometimes boys and girls are treated differently and are expected to do different things in the house – girls take care of kids, boys fix things*

3.2 When you were growing up, were you treated in different ways than your brothers/sisters/other kids in the house? (if yes, specify different than whom- brother or sister)

*Probes*

In terms of household duties, school performance, your future

Punished, encouraged, etc

Can you describe those differences?

3.3 What types of things did you hear growing up about what it means to be a (wo)man?

*Probes*

From who/where? mom, dad, siblings, grandparents

3.4 How do you think these things influenced what you thought about your future?

NOTE: If respondent has a child ask:

3.5 What types of expectations do you have of your son/daughter because he/she is a boy/girl?

*Probes*

How would this differ if he/she was the opposite sex?

#### **4.0 Ideals**

4.1 In general, what makes a woman a woman and a man a man?

*Probes*

What they do

How they look

How they act

4.2 What are some things that make a man attractive to a woman?

*Probes*

Image, reputation, physical appearance, how he acts

4.3 What are some things that make a woman attractive to men?

*Probes*

Image, reputation, physical appearance, how he acts

4.4 How is a woman in a relationship supposed to act?

*Probes*

When she is away from her partner

When she is with her partner

When they have a fight

When they are in public

When they are out with friends

4.5 How is a man in a relationship supposed to act?

*Probes*

When he is away from his partner

When he is with his partner

When they have a fight

When they are in public

When they are out with friends

#### **5.0 Class**

*Last I'd like to ask you a few questions about what you think about class. Imagine a ladder. This ladder represents how American society is set up. At the top of the ladder are the people who are the best off – the have the most money, the highest amount of schooling and the jobs that bring the most respect. At the bottom are people who are the worst off. They have the least money, little or no education, no job or jobs that no one wants or respects.*

5.1 Now think about your family. Where do you think your family would be on this ladder?

Follow-up questions:

Can you tell me more about why you think that?

5.2 How does your family's place on the ladder compare to where your friends' families are?

Follow-up questions:

Can you tell me more about why you think that?

5.3 How do you think your family's place on the ladder influenced what kind of options and opportunities you have?

*Probes*

For work?

For school?

For partners?

5.4 Can you tell me more about what kinds of options and opportunities you feel like you have?

*Is there anything else you would like to tell me about yourself and how you grew up?*

*Thank you for your time!*

## **Appendix B.2: Interview 2 (Female Version)**

*Thank you for meeting with me again today. The purpose of this part of the study is for you to talk about your thoughts about men and women and to talk about your own experiences in relationships. I'll be writing down some of what you tell me to help me ask you more questions. But because you are telling me a lot of information, I won't be able to remember it or write all of it down, this interview will be tape recorded like I told you in the consent. Remember, your name will never be connected to what you say and the tape will be destroyed after the study.*

*Like last week, we will be talking for about an hour. Let me know if you don't understand anything that I ask. And as we talked about, you don't have to answer any question that makes you uncomfortable.*

### **1.0 Intro**

Before we begin, I want to review some of the things we talked about last week in our first interview. *Interviewer: review a few details to refresh the respondent about what was discussed during the last interview.*

1.1 Is there anything you want to add from our conversation last week?

### **2.0 Perceptions of self**

Now I'd like to ask you a few questions about how you see yourself.

2.1 What are five words you would use to describe yourself?

2.2 How would you describe yourself as a:

Daughter

African American

Woman

*Sometimes people have things about them that draws others to them- makes other people want to be around them, or like them –like magnets. Do you know what I mean?*

2.2 What do you think draws other people to you?

*Probes*

Friends, romantic partners, young people, etc.

### **3.0 Current or Recent Relationship**

*I want to ask you a few questions about your current (or if no current, most recent boyfriend). By boyfriend I mean the person that you most recently (including now) had/are having a regular sexual relationship with.*

3.1 Can you tell me about your most current or most recent boyfriend?

*Probes*

How did you two meet?

Where did you meet him?

How long have you known him?



3.2 How would you describe your relationship with this person?

*Probes*

How long have you been together?

What do you two end up doing together on a regular day?

3.3 How do you two communicate?

*Probes*

Texting, cell phones, in person

Which method do you use the most?

Which do you prefer?

3.4 How often do you see him?

3.5 Thinking about this relationship, tell me about the things you have to make decisions about and who makes those decisions.

*Probes*

Financial, sexual, where to go, who to hang out with, what to wear, etc

3.6 Are there certain areas that you have more control over than he does?

*Probes*

Like what?

3.7 Can you tell me about the last time the two of you disagreed?

*Probes*

What was the fight about?

How did you resolve it?

3.8 How important is this relationship to you?

*Probes*

Relative to past relationships or other relationships in your life

3.9 Do you see yourself with this person in the future?

3.10 Is there anything that this person could do that wouldn't forgive?

*Probe*

Something he says? Something he does?

3.11 In general, what do you think makes an ideal boyfriend?

*Probes*

Physical appearance

The way he acts

The way that he treats you

The way he dresses

His reputation

#### **4.0 Sexual Activity**

*Now I want to ask you more questions about your sex life with your current boyfriend. If you don't have sex with your current boyfriend, I'd like to learn most about your most recent relationship where you had sex.*

4.1 Do you have sex with your current boyfriend?

(if no sex with the current boyfriend then the rest of the questions should be asked about the most recent person with whom they have had)

4.1a. Who was the last boyfriend who you had sex with?

*Probes*

When did you date him? How long did you date him?

4.2 Can you tell me about the first time that you had sex?

*Probes*

Tell me about the day/night it happened. Had he asked you to have sex before? Had either of you asked each other to have sex before? If yes, why then?

What type of sex did you have?

4.3 How often do you have sex with him now?

4.4 Do you use anything to protect yourself against pregnancy? I mean condoms, IUD, birth control.

*Probe*

What type?

How often?

Who makes the decisions regarding this?

4.5 Tell me about condom use with your most recent boyfriend.

*Probes*

If you do use condoms, how often do you use condoms?

What types of sexual activity do you use condoms for?

Who decided to start using condoms? Who decided to stop?

4.6 Can you tell me about any experiences you've had with cheating in your current/most recent relationship?

*Probes*

Condom use when cheating

4.7 In general, are there certain people that you would not use condoms with?

4.8 In general are there any situations when you would choose not to use a condom?

4.9 Can you tell me about an experience when you planned or wanted to use a condom, but then ended up not using one?

## **5.0 Conclusion**

5.1 Where do you see yourself at age 30?

In terms of:

Family?

Work?

5.2 Is there anything else you'd like to share with me?

*Thank you for taking the time to talk with me today.*

## APPENDIX C: QUALITATIVE CODING SCHEME

THEME	CODE	DEFINITION/DETAILS
<b>Class</b>	Class	Any reference to SES
	Class compare	Comparisons to class of others
<b>Communication</b>	Communication_parents	Communication with parents
	Communication_relationship	Communication with parents
	Communication_modes	Ways the participant communicates with romantic partners (eg. phone, email, in-person)
	Communication_contraception	Communication regarding contraception
<b>Family/ Growing Up</b>	Family	References to family structure, relatives, birth order, etc.
	Divorce	References to divorce/separation
	Sibling Comparison	Includes birth order references
	Residence	Includes residence history
	Neighborhood	Description of neighborhood of residence
	Rules	Includes punishment/encouragement
	Responsibility	Includes chores
	Baltimore	References to Baltimore City
	City/County	References to migration; comparisons between city and county
<b>Finances</b>	Violence	Violence not within intimate relationships; includes neighborhood violence
	Finances	Any references to finances/money
<b>Gender</b>	Financial Constraints	Lack of money; money as a barrier
	Attract_f	What makes a female attractive to a male
	Attract_m	What makes a male attractive to a female
	Role ideation_f	For females: includes beliefs about how to act, dress, etc.
	Role ideation_m	For females: includes beliefs about how to act, dress, etc.
	Gender comparison	Explicit comparison of males and females
	Gender expectations	Expectations related to being a man/woman
	Gender_messaging_f	Messages conveyed about being a woman
	Gender_messaging_m	Messages conveyed about being a man
	Gender treatment	Personal experiences based on gender
	Partner ideal	Description of ideal sex/romantic partner
<b>Goals</b>	Goals_barriers	Any barriers to achieving goals
	Goals_achieve	Achievement of goals or progress achieving goals
	Goals_now	Current goals
	Goals_youth	Goals during childhood
	Opportunities	Life experiences; facilitates goals and/or expands worldview
<b>Social Influence &amp; Support</b>	Influence_external	Any influence (social or structural) that's not family or teacher

	Influence_family	Any influence/expectations from non-primary caregivers extended family members
	Influence_parental	Includes influence of parents or caregivers
	Influence_teacher	Influence of teacher
	Social support	Includes parental involvement and participant's provision of support to others
<b>Relationships</b>	Cheat	Any reference to cheating
	Relationship_history	Past relationships
	Relationship_ideation	"Shoulds" regarding roles in relationships
	Relationship_importance	How important the participant's current/most recent relationship is to him/her; includes description of whether participant sees himself/herself with a partner in the future
	Relationship_decision making	Decision-making specifically in sexual/romantic relationships
	Relationship_emotional intimacy	Intimacy specifically in sexual/romantic relationships
	Relationship_dynamics	How relationships are/did play out; includes time use in relationships
	Partner_real	Description of real partner
	Partner_meet	How participant met his/her most recent or current partner
	Fight	Any mention of arguments in relationships; Will be double coded with relationship role; relationship ideation; family
	Partner_selection	Any main or casual partner
	Marriage	Any mention of marriage
	Forgive	What partner could do that participant would not forgive
<b>Role Models</b>	Role model_public	Participant's public/famous role model
	Role model_private	Participant's personal role model (not famous)
	Obama	Any reference to Obama
<b>Sexual Activity</b>	Sexual activity	Sexual practices including frequency of sex
	Sexual activity_first	First sex with most recent partner
	STI	Any discussion of sexually transmitted infections including testing for STIs
	Contraception	References to contraception including condoms
	Fertility Intention	
	Condoms	Any discussion of condom use, attitudes towards condoms, etc.
<b>Time Use</b>	Sports	Any mention of sports
	Time use_now	What participant does with his/her time
	Time use_youth	What participant did with his/her time during childhood
	School	Attendance at school; school logistics
<b>Values/ Characteristics</b>	Independence	Messages or feelings of independence; Autonomy
	Trust	Any discussion of trust within relationships; includes experiences with lying

Education	School/education as a value
Faith	References to church/religion
Hygiene	Cleanliness
Values_Sex	Also includes values related to dating and romantic relationships
Shame	Humiliation
Pressure	Internalization of expectations; negative motivation
Resilience	Ability to overcome adversity
Self Efficacy	Expressions of self-confidence; belief in oneself
Faith	References to Faith/Religion
Respect	Discussions of giving/getting respect

# APPENDIX D: Individual and Partnership Level Variables

	Variable	Type of variable	Description
<b>Individual-Level Characteristics</b>			
<b>Demographic</b>	Sex	Dichotomous	Self-reported sex (Female=1; Male=0)
	Guardian's Education (SES)	Dichotomous	Education achieved by participant's primary caretaker during childhood (1=Some college or more; 0= High school graduate or less)
	Age	Continuous	Age in years at the time of the survey
	Race	Dichotomous	Self-reported race (White=1; African American=0)
	Ever Incarcerated	Dichotomous	Ever spent time in a jail or correctional facility (Yes=1; No=0)
<b>Sexual Risk Profile</b>	Age at first sex	Continuous	Age in years at first vaginal sex
	Years since first sex	Continuous	Time in years since first vaginal sex
	Number of partners in past 3 months	Dichotomous	Respondent's response to the question, "How many different sex partners have you had in the past 3 months?" (2+=1; 0-1=0)
	Most Recent Partner Type	Dichotomous	For respondent's last partner: "Do you consider [partner's name] a main or casual partner?". Main partner defined as "someone you have sex with and you consider to be the person you are serious about". Casual partner defined as "someone you've had sex with only once or a few times or you have sex with on an ongoing casual basis. The important thing is that this person is not a main partner to you." (Main=1; Casual=0)
	History of STI	Dichotomous	Participant's response to the questions: "Have you been tested for a sexually transmitted disease other than HIV?" and "What were the Results?" (Yes, Positive=1; No/Yes, Negative=0)
	Condom use at last sex	Dichotomous	Whether participant used a condom at last vaginal/anal sex. (Yes=1; No=0)
	High-Risk Sex Partnership	Dichotomous	Self-report of three or more sex partners in the past 3 months, having a sex partner who practiced concurrency in the past 6 months, exchanged sex in the past 6 months, or having had an HIV+ and/or IDU sex partner in the past 6 months. (Yes=1; No=0)
<b>Gender Role Beliefs</b>	Average PAIR score	Continuous	Average score of 8 Likert scale response (1-4) items from Power and Attitudes in Relationships scale (Higher score → more equitable gender role beliefs; Lower score → less equitable gender role beliefs)
	Average VTSSR	Continuous	Average score of 12 Likert scale response items (1-4) from Validation through Sex and

	Score		Sexual Relationships scale. (Higher score→ less need for personal and social validation through sex; Lower score→ more need for validation through sex)
	Average HMI Score	Continuous	Average score of 11 Likert scale response (1-4) items from Hypermasculinity index. (Higher score→ less traditional beliefs about masculinity; Lower score → more traditional beliefs)
	Average HFI Score	Continuous	Average score of 26 binary response items (0=hyperfeminine belief; 1=more equitable belief) from Hyperfemininity index (HFI). (Higher score→ less traditional beliefs about femininity ; Lower score → more traditional beliefs)
<b>Partnership-Level Characteristics</b>			
<b>Sex Partner</b>	Partner's race	Categorical	Respondent's report of partner's race (African American=0; White=1; Other=2)
	Partner's History of STI	Dichotomous	Respondent's response to the question: "Has [partner's name] ever been diagnosed with an STD?" (Yes=1; No=0)
	Partner ever incarcerated	Dichotomous	Respondent's response to the question: "Has [partner's name] ever been incarcerated?" (Yes=1; No=0)
<b>Relationship</b>	Partner age difference	Dichotomous	Age difference of 2 or more years between partners. (1= $\geq 2$ years; 0= $< 2$ years)
	Type of Partnership	Dichotomous	Measured with the question: "Do you consider [partner's name] a main or casual partner?". Main partner defined as "someone you have sex with and you consider to be the person you are serious about". Casual partner defined as "someone you've had sex with only once or a few times or you have sex with on an ongoing casual basis. The important thing is that this person is not a main partner to you." (Main=1; Casual=0)
	Condom Use at Last Sex	Dichotomous	Measured with the question: "the <u>last time</u> that you had vaginal/anal sex with [partner's name], did you use a condom?" (Yes=1; No=0)
	Index Concurrency (Males)	Dichotomous	Measured by asking for each partnership, "Did you have sex (meaning ONLY anal or vaginal sex) with anyone else while you were seeing [partner's name]?" (Yes=1; No=0)
	Sex Partner Concurrency (Females)	Dichotomous	Measured by asking for each partnership "Did [partner's name] have sex (meaning ONLY anal or vaginal sex) with anyone else at any point while you were seeing him?" (Yes=1; No=0)



**APPENDIX E: Bivariate Associations between Individual and Partnership-level Characteristics and Individual's PAIR Score within Male and Female-Reported Partnerships (N=431)**

	Males (n=209)		Females (n=222)	
	Coefficient	p	Coefficient	p
<b>Individual Characteristics</b>				
Race	-0.05 (-1.09-1.00)	0.932	0.09 (-0.49-0.69)	0.744
Age	-0.02 (-0.14-0.12)	0.892	-0.01 (-0.11-0.09)	0.808
Guardian's Education (SES)	-0.35 (-1.02-0.31)	0.297	0.15 (-0.33-0.64)	0.531
Partners in Past 3 Months	-0.42 (-1.01-0.16)	0.156	-0.21 (-0.69-0.28)	0.406
Years Since First Sex	0.00 (-0.12-0.12)	0.993	-0.02 (-0.12-0.07)	0.674
Age at First Sex	-0.01 (-0.17-0.15)	0.916	0.00 (-0.13-0.14)	0.946
History of STI, yes	0.20 (-0.41-0.82)	0.517	-0.31 (-0.87-0.25)	0.272
Ever Incarcerated, yes	-0.59 (-1.17-0.00)	0.051*	0.04 (-0.56-0.64)	0.887
<b>Partnership-Level Variables</b>				
<b>Partner's Race</b>				
African American	--		--	
White	0.12 (-0.61-0.84)	0.754	0.31 (-0.36-0.97)	0.370
Other	0.00 (-1.23-1.24)	0.998	-0.02 (-0.89-0.85)	0.961
Partners' Age Difference	-0.05 (-0.68-0.58)	0.884	0.15 (-0.22-0.53)	0.434
Partner Type	0.30 (-0.02-0.62)	0.065#	0.002 (-0.40-0.41)	0.992
Condom use at last sex, yes	0.23 (-0.21-0.67)	0.306	-0.08 (-0.39-0.22)	0.595
Index Concurrency, yes	-0.67 (-1.16--0.18)	0.007**	0.20 (-0.32-0.72)	0.449
Partner Concurrency, yes	-0.16 (-0.73-0.42)	0.595	0.58 (0.24-0.92)	0.001**
Partner was incarcerated, yes	-0.48 (-2.03-1.07)	0.542	0.09 (-0.30-0.49)	0.637
Partner had STI, yes	-0.70 (-2.01-0.62)	0.296	-0.13 (-0.55-0.29)	0.532

#p<.10 \*p<.05 \*\*p<.01

Race (0=African American, 1=White); Guardian's Education (0=High school or less, 1=Some college or more), Partners in the past 3 months (0=0-1, 1=2+), Partner's Age Difference (0=<2 years, 1>=2 years); Partner Type (0=casual; 1=main)

**APPENDIX F: Characteristics of Males (n=106) and Females (n=166) Reporting at Least One Heterosexual Partnership in the Past 6 Months by Race**

	<b>Males</b>			<b>Females</b>		
	<b>African American</b> (n=60)	<b>White</b> (n=46)		<b>African American</b> (n=104)	<b>White</b> (n=62)	
<b>Individual Characteristics</b>	(%)	(%)	p	(%)	(%)	p
<b>Age</b> (mean, SE)	19.9 (.43)	21.0 (.47)	0.079	21.2 (.29)	21.8 (.36)	0.234
<b>Guardian's Education (SES)</b>						
High school Diploma or less	48.6	46.8		61.7	39.5	
Some College or more	51.4	53.2	0.886	38.3	60.5	0.027*
<b>Partners in Past 3 Months</b>						
0-1	45.6	69.0		77.9	87.3	
2+	54.4	31.0	0.061	22.1	12.7	0.179
<b>Age at First Sex</b> (mean, SE)	14.4 (.41)	15.3 (.43)	0.099	15.6 (.25)	15.9 (.35)	0.506
<b>Years since First Sex</b> (mean, SE)	05.6 (.55)	05.8 (.64)	0.778	05.7 (.36)	05.9 (.41)	0.763
<b>History of STI (non-HIV), yes</b>	10.7	02.3	0.206	08.1	12.5	0.508
<b>HIV Positive, yes</b>	00.0	00.0	1.000	00.0	00.5	0.314
<b>Ever Incarcerated, yes</b>	29.5	13.4	0.118	09.7	07.7	0.739

\*p<.05 \*\*p<.01

**CURRICULUM VITAE**  
**Pamela S. Lilleston**

**EDUCATION**

**PhD**, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD  
Department of Health, Behavior and Society, Expected 2013  
Dissertation Topic: Attitudes Towards Relationship Power and Concurrent Sexual Partnerships among African American and White Adolescents in Baltimore, MD  
Advisor: David Holtgrave, PhD; Co-Advisor: Susan Sherman, PhD

**MHS**, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD  
Department of Population, Family, and Reproductive Health, 2010  
Master's Thesis: "This is our sanctuary": Perceptions of safety among exotic dancers in Baltimore, MD  
Advisor: Kristin Mmari, DrPH

**BA**, Georgetown University, Washington, DC  
History, 2004  
Honor's Thesis: The *Sacchi Law*: Defining Gender in Post-World War I Italy  
Advisor: Tommaso Astarita

**RESEARCH EXPERIENCE**

**Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**  
Department of Epidemiology, Student Investigator  
April 2011- Present  
Conducted quantitative and qualitative research to assess the interrelationship between gender, race and class and the impact of these identities on risk behavior for STDs/HIV among Baltimore adolescents. Coordinated and trained three-person study team in qualitative interviewing. Gathered, coded, and analyzed in-depth interview data. Analyzed quantitative data using exploratory factor analysis, multivariate regression, and multi-level regression.

Rakai Health Sciences Program, Research Assistant  
July 2012 - Present  
Coded and analyzed qualitative focus group data to identify social and behavioral determinants related to men's use of reproductive health/HIV services in Rakai District, Uganda. Wrote manuscript for publication.

Department of Health, Behavior and Society, Student Investigator  
December 2012 – Present  
Conceptualized and implemented qualitative research to explore the social determinants of STD/HIV transmission among adult film performers. Developed funding proposal, research protocol, and interview guides. Networked with adult film industry stakeholders to increase acceptability of research. Coordinated three-person study team, trained team members in qualitative interviewing, and conducted in-depth interviews. Coded and analyzed data, wrote manuscript, and managed project budget.

Department of Epidemiology, Research Assistant  
May 2009 – Present

Conducted qualitative research to explore the social determinants of STD/HIV infection among exotic dancers in Baltimore. Developed interview guides, conducted interviews and observations, coded and analyzed qualitative data, and wrote manuscripts for publication.

Department of Epidemiology, Research Assistant  
March 2012 – April 2013

Developed measurement tools to quantitatively characterize the risk environment of exotic dance clubs. Supported development of funding proposal, interview guides, and observation forms. Networked with exotic dance club employees to evaluate feasibility of study and increase acceptability of research.

Department of Health, Behavior and Society, Interviewer and HIV Counselor  
July 2010 – December 2010

Participated in implementation of National HIV Behavioral Surveillance Study in Baltimore. Conducted quantitative surveys with individuals most at risk for HIV infection, facilitated focus group discussions with target population, and served as HIV counselor.

Center for Injury Research and Policy, Data Collector  
May 2009 – August 2009

Collected quantitative data for the evaluation of Baltimore City Fire Department home visiting program. Trained and evaluated data collectors on data collection techniques.

### **International Youth Foundation, Baltimore, MD**

Planning for Life Project, Monitoring and Evaluation Consultant

July 2010 – December 2012

Designed and implemented mixed-methods baseline and final evaluation studies, designed qualitative and quantitative monitoring and evaluation instruments, provided recommendations for program development, and analyzed “lessons learned” from multi-country youth reproductive health/HIV integration intervention.

### **EngenderHealth, Dar es Salaam, Tanzania**

CHAMPION Project, Paid Intern  
August 2009 – December 2009

Provided monitoring and evaluation technical assistance to gender-based HIV prevention intervention. Designed participatory training needs assessment for Community Action Teams to identify gaps in capacity and inform development of training program. Developed performance standards to evaluate project and partner NGOs in key HIV prevention program areas including gender-based programming, community engagement, male-friendly services, peer-education, and advocacy.

## **TEACHING EXPERIENCE**

### **Johns Hopkins Bloomberg School of Public Health, Baltimore, MD**

Department of Health, Behavior and Society, Teaching Assistant  
January 2012- May 2012; January 2013-May 2013

Instructor: Dr. David Holtgrave

Course: Translating Research into Public Health Programs. Graded assignments, provided technical advice to students on quantitative policy analysis projects, held office hours.

Department of Health Policy and Management, Teaching Assistant  
October 2010 – December 2010; October 2011- December 2011; October 2012- December 2012  
Instructor: Mindi Levin  
Course: Baltimore Community Practicum. Lead class discussions, graded assignments, provided technical support for projects, held office hours.

Department of Population, Family, and Reproductive Health, Teaching Assistant  
January 2010 – March 2010  
Instructors: Donna Strobino and Kristin Mmari  
Course: Fundamentals of Program Evaluation. Graded assignments, held office hours, responded to student inquiries by email.

## **OTHER WORK EXPERIENCE**

### **Chemonics International, Washington DC**

Program Associate

May 2007 – July 2008

Managed USAID-funded Anti-Trafficking Task Order, Women's Legal Rights Initiative, and Nepal Transition Initiative. Conducted in-country data collection and analysis to inform program development of women's economic empowerment project in Islamabad, Pakistan and natural resource co-management project proposal in Dhaka, Bangladesh. Participated in proposal development including budget creation, writing, and recruiting. Actively participated in gender and health practice networks including integrating gender into project proposals and monitoring and evaluation plans.

### **Legal Momentum, Washington, DC**

Immigrant Women Program, Paid Intern

July 2006 – May 2007

Organized and coordinated two 90-person trainings to build capacity for serving battered immigrant women throughout the United States. Responded to immigration-related technical assistance needs of attorneys and immigrant women. Conducted legislative research and analyses on the Violence Against Women Act and immigration. Staffed direct lobbying and drafted policy memoranda on the legal rights of battered immigrant women for government agencies. Drafted quarterly and grant reports.

### **U.S. Peace Corps, Joypurhat, Bangladesh**

Youth and Community Development Volunteer

October 2004 – March 2006

Designed curriculum for, taught, and evaluated Joypurhat's first young women's reproductive health and life skills course; topics included STDs/HIV, intimate partner violence, reproductive biology. Designed two-day reproductive health and life-skills training for Peace Corps volunteers, introduced culturally sensitive methods of teaching reproductive health to Bangladeshi youth. Organized and facilitated two women's clubs totaling 17 members, built local female support network, engaged members in volunteer activities. Developed and taught three, three-month Spoken English courses to unemployed Bangladeshi youth; enhanced students' job skills and motivated students to solve social problems through ongoing projects, presentations, and discussions on global issues.

## **LEADERSHIP AND AWARDS**

**Co-coordinator, 2012-2013**

Sexually Transmitted Infections Journal Club, Johns Hopkins Bloomberg School of Public Health

**Doctoral Distinguished Research Award, 2012-2013**

Department of Health, Behavior and Society, Johns Hopkins Bloomberg School of Public Health

**Ruth L. Kirschstein National Research Service Award, 2011-2013**

National Institute of Allergy and Infectious Diseases, National Institutes of Health

**Co-coordinator, 2011-2012**

Department of Health, Behavior, and Society Student Organization, Johns Hopkins Bloomberg School of Public Health

**Delta Omega Honors Society, 2010**

Johns Hopkins Bloomberg School of Public Health

**Co-head, 2005-2006**

Women in Development/Gender and Development Committee, Peace Corps Bangladesh

**Cum Laude, 2004**

Georgetown University

**Departmental Honors, 2004**

History Department, Georgetown University

**PUBLICATIONS**

**Lilleston, P.**, Ramachandran, D.V., Hebert, L.E., Ellen, J.M., & Sherman S.G. (under review) Socioeconomic Instability and Gender Ideation among Urban African American Adolescents.

Hebert, L.E., **Lilleston, P.**, Ramachandran, D.V., & Sherman, S.G. (under review) It Just Happened: Locating Sexual Communication within Adolescent Partnerships in Baltimore City.

Ramachandran, D.V. Hebert, L.E., **Lilleston, P.**, Sherman, S.G. (under review) *“I’m not that”: A qualitative exploration of race and gender identities among adolescent African American Men.*

Limaye, R., Srirojn, B., **Lilleston, P.**, Aramrattana, A., Thompson, N., Celentano, D., & Sherman, S.G. (2012). A qualitative exploration of the effects of increasing the minimum purchase age of alcohol in Thailand. *Drug and Alcohol Review*.

**Lilleston, P.**, Reuben, J., Sherman, S.G. (2012). “This is our sanctuary”: Perceptions of safety among exotic dancers in Baltimore, Maryland. *Health & Place*. 18(3), 561-567.

Sherman, S.G., **Lilleston, P.**, & Reuben, J. (2011). More than a dance: The production of sexual health risk in the exotic dance clubs in Baltimore, USA. *Social Science & Medicine*. 73(3), 475-481.

Sherman, S.G., Reuben, J., Serio Chapman, C., & **Lilleston, P.** (2011). Risks associated with crack cocaine smoking among exotic dancers in Baltimore, MD. *Drug and Alcohol Dependence*,

114(2-3), 249-252.

Manuscripts in Preparation:

**Lilleston, P.,** Reuben, J., & Sherman, S.G. *Exotic Dance in Baltimore: From Entry to HIV Risk.*

**Lilleston, P.,** Marcell, A.V., Nakyanjo, N., Leonard, L., & Wawer, M.J. *Multi-level Influences on Acceptance of Medical Male Circumcision in Rakai District, Uganda*

Evaluation Reports:

**Lilleston, P.** (2012). *Planning for Life Phase 2: Final Evaluation.* Baltimore, MD: International Youth Foundation.

**Lilleston, P.** (2010). *Planning for Life Phase 2: Baseline Evaluation.* Baltimore, MD: International Youth Foundation.

## **PRESENTATIONS**

**Lilleston, P.,** Marcell, A.V., Nakyanjo, N., Leonard, L., & Wawer, M.J. (July, 2013). *“Circumcision Makes Them Half Men”: Concerns about Loss of Masculinity May Deter Acceptance of Safe Medical Male Circumcision.* STI & AIDS World Congress 2013, Vienna, Austria.

**Lilleston, P.,** Mead, E., Cernigliaro, D., & Sherman, S.G. (July, 2013). *Sexual health in the Adult Film Industry (AFI): Environmental Barriers and Facilitators of Sexually Transmitted Infection (STI) Transmission.* STI & AIDS World Congress 2013, Vienna, Austria.

**Lilleston, P.** (April, 2013). *Economic Context and Health Disparities in the Sex Industry.* Health, Behavior and Society Departmental Seminar Series, Baltimore, MD.

**Lilleston, P.,** Reuben, J., & Sherman, S.G. (October, 2012). *Exotic Dance in Baltimore: From Entry to HIV Risk.* American Public Health Association 140th Annual Meeting and Exposition, San Francisco, CA.

## **POSTERS**

**Lilleston, P.,** Mead, E., Cernigliaro, D., & Sherman, S.G. (July, 2013). *Sexual health in the Adult Film Industry (AFI): Environmental Barriers and Facilitators of Sexually Transmitted Infection (STI) Transmission.* STI & AIDS World Congress 2013, Vienna, Austria.

Cernigliaro, D., **Lilleston, P.,** Mead, E., & Sherman, S.G. (November, 2013). *Protecting the health of adult film performers: Industry perspectives on the safer sex in the adult film industry act (Measure B).* American Public Health Association 141<sup>st</sup> Annual Meeting and Exposition, Boston, MA.

## **ADDITIONAL QUALIFICATIONS**

- Languages: Conversational Bangla, Proficient Italian, Basic Swahili
- Computer and Data Analysis: Microsoft Word, Excel, and PowerPoint; STATA quantitative analysis software; Atlas.ti qualitative analysis software, EndNote
- Additional Certifications: HIV Counselor, Yoga Instructor